Read what 6-A Alumni have to say about their 6-A Experience

“My 6-A experience at General Electric Corporate Research and Development provided me the opportunity to work on a diverse set of problems encountered in industry and explore life in an industrial research lab. I have found the experience gained in the 6-A Program invaluable both in start-up environments and corporate research lab settings throughout my career. As a 6-A supervisor we have hosted several 6-A students at Microsoft Research Asia and the students are smart, energetic, and provide fresh perspectives. They also learn from interactions with researchers and other interns. It’s truly a win-win for the students and their mentors.”

Eric Chang, Director of Technology Strategy
Microsoft Research Asia, Beijing, China
6-A Graduate

“As a 6-A student at Linear Technology, I worked with passionate industry experts with a deep understanding of how to develop winning products. Through their mentorship, I gained an education that perfectly complemented the coursework at MIT. Now, as a Design Manager at Linear Technology, I have the tremendous opportunity to give back by mentoring 6-A interns as well as full time engineers. Based on my personal experience, I can confidently say that Linear Technology looks to 6-A for top engineering talent and looks to the alumni of the 6-A program for technology leadership.”

John Tilly, Design Engineering Manager
Analog Devices, Milpitas, CA
6-A Graduate

“Back at the turn of the century, I was a 6-A student at Linear Technology. I had received an e-mail about the 6-A program, and decided to see what it’s about. What drew me to apply was the promise of combining industry experience with my curriculum at MIT. I hadn’t decided about whether to pursue academics or industry at that point, but I knew I wanted to get a taste of real world challenges. As it turns out, my internships at Linear gave me a great introduction to what cutting-edge companies are working on, and it gave me a sense of purpose and perspective for my later coursework at MIT. My projects were always of immediate value to the company, and I was happy to be able to apply the tools and knowledge I had learned at MIT. Now that I’ve graduated, I am an advocate for the 6-A program wherever I go. My current company, Maxim Integrated, recently joined the 6-A program, and we are excited to offer the same opportunities to MIT students that are curious about how the best companies operate. Diverse and innovative companies like Maxim give MIT students a unique opportunity to work in a fast-paced environment and solve practical problems. The long-term nature of the 6-A program gives companies a more valuable result from the more rigorous projects that the students undertake. It’s a win-win for all parties involved, and I’m looking forward to working with more MIT students next summer!”

Cheng-Wei Pei, Corporate Applications Engineer
Maxim Integrated Products, Sunnyvale, CA
6-A Graduate
Preface

This publication is the 50th revised annual edition of the Student Handbook and the 101st year of the 6-A Internship Program founded in 1917. Our goal is to provide answers to applicants’ most frequently raised questions about 6-A and its participating companies. Additional information can be found at the 6-A web-site http://6a.mit.edu.

If you have any questions throughout the admission process, or the 6-A internship, please feel free to contact the 6-A Director, Professor Tomás Palacios (tpalacios@mit.edu), or Administrator, Kathleen Sullivan (kaths@mit.edu).

Introduction

MIT’s Department of Electrical Engineering and Computer Science (EECS) 6-A M.Eng. Thesis Program matches industry mentors with Course VI undergraduate students interested in obtaining both a Bachelor (S.B.) and Masters of Engineering (M.Eng.) degree in five years.

This unique opportunity gives students who have demonstrated excellent academic preparation and motivation a chance to relate the scientific and engineering principles, which they learn in the classroom, to current engineering problems in industry, while obtaining a funded M.Eng. thesis for the M.Eng. year.
The 6-A Internship Admission Process

Who Can Apply?

Any course VI junior or senior in good standing may apply to the 6-A Internship Program. Students must be committed to the completion of the work assignments and of the M.Eng. degree with an industry-based thesis. Seniors applying to the program should have done a previous summer internship in industry or a SuperUROP research internship, although exceptions can be granted on a case-by-case basis.

What is the 6-A Program?

The 6-A Program allows students to get an EECS M.Eng. Degree while doing the thesis work at a company. More than 2,500 Course VI students have gone through the program over the years, including Amar Bose (founder of Bose Corporation), Cecil Green (founder of Texas Instruments), Andrew Viterbi (founder of Qualcomm), Ray Stata (founder of Analog Devices), Thuan Pham (Uber CTO), and many others.

The 6-A program currently has two different tracks to provide maximum flexibility to students:

Track #1 consists of two work assignments at 6-A companies. The first one during the summer of the Junior Year, while the second one covers a six month period during the summer and fall of the MEng year. It is during the second work assignment when the student works on his or her M.Eng. Thesis.

Track #2 is ideal for students who are now seniors, as it focuses on the M.Eng. year. There is only one work assignment, a six month internship at the 6-A company during which the student works on his or her M.Eng. Thesis.

The timeline for the two tracks is shown below.

<table>
<thead>
<tr>
<th>Track 1</th>
<th>Work Assignment 1</th>
<th>Work Assignment 2</th>
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<tbody>
<tr>
<td>Summer term following Junior Year:</td>
<td>Summer and Fall terms of M.Eng Year: Work at 6-A Company</td>
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</tr>
<tr>
<td>Work at 6-A Company</td>
<td>Spring Term of M.Eng. Year: Work with MIT EECS Thesis Advisor to Write and Complete thesis; graduate</td>
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<table>
<thead>
<tr>
<th>Track 2</th>
<th>Work Assignment</th>
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<tbody>
<tr>
<td>Summer and Fall terms of M.Eng Year: Six month internship at 6-A company while student works on M. Eng. Thesis</td>
<td></td>
</tr>
<tr>
<td>Spring Term of M.Eng. Year: Work with MIT EECS Thesis Advisor to Write and complete thesis; graduate</td>
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</table>
Orientation

The EECS Department hosts Orientation Meetings and Student Open Houses every year in early May and at the end of September or beginning of October. This meeting is a great opportunity for students to learn more about the 6-A Program and member companies.

The Application Process

Anyone interested in joining 6-A must file a formal application, resume, letter of recommendation, grade report, and interview preference list in October for the fall recruitment. The application should be submitted on-line through the 6-A website. This will open in late September. See Appendix D for the 6-A Calendar of Events.

As part of the application process, the student should submit a letter of recommendation. It is best to request the letter from faculty or others who know you and your work well (e.g., UROP, SuperUROP, project or summer job supervisor), instead of someone who only knows you superficially. Keep in mind this letter, as well as your CV and other application material, will be used by the member companies when choosing the students they want to interview for the program. Make sure the application material highlights why they should hire you!

The Selection Process

Students’ “Interview Preference List” must be filed with the 6-A office when the 6-A application is submitted. Due to the limited number of available interview slots per company, the 6-A office schedules interviews. 6-A companies preview applications and select the students they wish to interview.

Company representatives visit MIT in late October or early November to attend a Company Open House. The Company Open House gives company representatives a chance to informally meet prospective interns. Formal interviews take place during the following two days. (For tips on interviewing, please see Appendix C.) A student’s individual “6-A Interview Schedule” MUST BE PICKED UP at the Company Open House, typically held the evening before the interview process starts.

After the Company Open House and interviews, companies submit a ranked list of students selected for consideration based on the formal interviews and the application package. The 6-A program then matches company lists with student lists to make placements maximizing student and company preferences.

If your interests change after completing the first assignment, you can apply to other 6-A companies for future 6-A assignments or leave 6-A entirely.
Frequently Asked Questions

The intent of the 6-A program is to guide students, who wish to have industry experience with technology leaders, through the M.Eng. thesis at MIT. Your company mentor, EECS 6-A faculty advisor, and the 6-A staff want you to succeed, therefore if you have any questions or concerns at any time, please do not hesitate to ask. For your convenience, however, answers to some frequently asked questions follow.

Q. Do I keep my regular faculty counselor/academic advisor?

A. Yes, when a student joins the 6-A Program they keep the faculty counselor assigned to them when they joined Course VI. Your faculty counselor continues to handle registration matters and should be consulted for education advice.

Q. What is a 6-A faculty advisor? How is that different from the MIT M.Eng. Thesis Advisor?

A. The 6-A Program assigns one EECS faculty advisor to each company. An important role of the 6-A faculty advisor is to work with the 6-A students interning at the company in order to identify the best MIT M.Eng. Thesis Advisor for a given Thesis topic. The faculty advisor also assists the student, and student’s MIT M.Eng. Thesis Advisor, with issues relating to 6-A work assignments and generally visits their 6-A students at the 6-A company once each summer.

Q. What are the responsibilities of a 6-A company?

A. It is the obligation of the 6-A partner company to assist you in achieving your educational and work experience goals through the following:

• Assign exciting projects using state-of-the-art technology.
• Assign a company mentor to supervise your 6-A work assignments.
• Pay competitive salaries, equivalent or better than a research assistantship on campus.
• Communicate with your assigned MIT 6-A Faculty Advisor and MIT Thesis Advisor.
• Assess and evaluate your progress.
• In the case of 6-A Core Partners (for the definition of 6-A Core Partners, please see below), provide a 6-A fellowship or research assistantship to fund the student’s tuition during the spring term of the M.Eng. year if the student was not able to secure a teaching assistantship that term.

Q. How am I graded?

A. Students are required to submit a mid-term and final report on each work assignment. You will receive an “Incomplete” if you do not return complete reports on time. Additionally, we require company mentors to complete an “Employer's Evaluation Report” at the conclusion of each assignment. All of these reports enter into the
granting of academic credit for 6-A work assignments. If you meet all the reporting requirements and have performed satisfactory work at your 6-A company you will receive a “P” grade in your 6-A registration (6.951).

Q. How can I fit all my classes into my class schedule?

A. Because a 6-A student in the M.Eng. Program has one less term on campus, some planning is necessary so that all requirements can be met on time. Some general notes appear below:

By registering for 6.921 and 6.922 during the first two summer assignments, you pick up two unrestricted electives for 24 (UG) units. By registering for 6.951 during the graduate 6-A assignment in the fall term, you pick up an additional 12 (G) units of the 66 units required for M.Eng.

6-A students also register for 24 thesis units (6.ThM) (during the graduate Summer and Fall assignments) to complete the M.Eng. thesis. If the thesis is not submitted by the beginning of the Spring Term, students register for another 12 thesis units.

Plan your M.Eng. program so that during your last term on campus you need a maximum of two classroom subjects to meet your M.Eng. degree requirements. Then you can be a teaching assistant, if selected, during your last term, both for its educational value and to obtain full teaching assistantship funding including full term tuition, a stipend, and paid medical insurance. If you are a TA or RA a maximum of 27 classroom subject units (two classes) are allowed.

Every M.Eng. program must include four subjects (42 units) of Approved Advanced Graduate Subjects (AAGS) as well as two M.Eng. Restricted Electives. Do not leave this for the last term as the work load will be too large, especially if you are also trying to finish your thesis. Take AAGS classes and/or M.Eng. Restricted Electives during your senior year. You can use 6.921, 6.922 and 6.951 credit towards your undergraduate units, and then use the AAGS classes for the M.Eng. requirements.

Q. Do I have to do the six-month M.Eng. internship in the summer/fall?

A. 6-A students admitted to the M.Eng. Program may, by mutual arrangement with their company, select either a Spring/Summer or Summer/Fall schedule for their six-month internship. Some students prefer to remain at MIT during the spring in order to take graduate subjects, which will aid them with the work they will be doing on their graduate assignments. Others find that due to the sequencing of related subjects on a fall-spring basis, they need to select the Spring/Summer schedule in order to remain at MIT during a Fall Term of graduate study.

The purpose behind making six-month internship contiguous is to provide the student sufficient time to do an in-depth piece of engineering work at the company which will be acceptable to the Department’s Faculty as the basis for the M.Eng. Thesis. For special circumstances, with the agreement of their 6-A Company, 6-A students can request from the 6-A Program Office a different graduate internship schedule.
Q. As an Intern, will I be paid?

A. Yes, you will receive a competitive salary during your work assignments. However, we believe salary should not be the main determinant in the selection of a particular company. Also, keep in mind that depending on whether the company you are interning to is a Core member or an Affiliate member of the program, your MIT tuition may or may not be covered by the company.

6-A student salaries are established by the individual companies and are not necessarily uniform amongst all 6-A companies. Salary information is available from the individual company only, not from the 6-A office.

Q. Will my salary ever increase?

A. Yes. You will generally receive an increase in salary for each successive internship. By the time you complete your senior year you will have completed the academic work for your S.B. degree, and a company normally increases salaries during the 6-A M.Eng. year.

Q. Will I receive company benefits, like insurance?

A. 6-A students are generally considered temporary employees and are not eligible for company benefits such as medical insurance. However, some 6-A companies offer a housing subsidy, partial support for local travel such as shuttle bus, and will usually pay roundtrip transportation from MIT to the company. Please discuss this directly with the 6-A company.

Q. Am I guaranteed admission into the M.Eng. program?

A. No. M.Eng. admission is primarily determined by a minimum grade point average of 4.25 in your technical subjects. While it is the intent of the 6-A Program to guide you through the M.Eng. degree at MIT, this, of course, depends on the academic admissibility of each student.

Decisions on M.Eng. admissions are generally made in June after the student's junior year, but if their academic record is borderline they may be placed on HOLD until the following January to include the last 6-A assignment and fall term grades in the student’s credentials for admission.

Q. What do I need to know about my M.Eng. Thesis?

A. The M.Eng. Thesis should be the result of a reasonably comprehensive 6-month effort where the student shows considerable initiative, creative thought, and good deal of individual responsibility. The thesis may be a design project, an analytical paper, or experimental work of a technical nature.

Examples of previous 6-A thesis projects can be found here:

http://6a.mit.edu/students/sample-theses

And more information on the logistics can be found here:

Q. Who supervises my Thesis?

A. A 6-A student, although doing a M.Eng. Thesis while at the company, requires an MIT faculty member as an M.Eng. Thesis Advisor just like any other EECS student. The 6-A faculty advisor to the company or the 6-A Director may also assume this added responsibility for some of the students, but other members of the faculty will, of necessity, be asked to assist some students.

Because the Institute values the time spent by company thesis supervisors in the work which eventually becomes a student’s thesis, the company thesis supervisor is also asked to sign the thesis title page as an acknowledgement of their contribution to this work.

Q. What is the M.Eng. Thesis Proposal?


Students involved in track 2 of the 6-A program (i.e. doing only a six-month internship at the company) should file their Thesis Proposal within one month of starting their work at the company.

The EECS Thesis Guide is a valuable tool that will take you step by step through your M.Eng. year. This guide will answer any and all questions you may have during your internship through completion of your thesis. [http://www.eecs.mit.edu/ug/thesis-guide.html](http://www.eecs.mit.edu/ug/thesis-guide.html)

Q. I am ready to submit my M.Eng. Thesis, is there anything else I should do?

A. At the time of submission, the completed Thesis must be accompanied by a “Thesis Release Letter” from the 6-A company ([http://www.eecs.mit.edu/ug/thesis-guide.html#appendixB](http://www.eecs.mit.edu/ug/thesis-guide.html#appendixB)) stating that the thesis is within the scope of the thesis proposal as previously approved; does not contain any material that is objectionable to the company; recognizes that the actual thesis document will be the permanent property of MIT; and will be placed in the MIT Library. The student or MIT owns the copyright to the thesis but the 6-A company has permission to reproduce and distribute copies of 6-A Theses done at the 6-A company in whole or in part, and to grant others the right to do so. The thesis is signed by both the MIT and 6-A company thesis advisors.

**DUE TO TIME CONSTRAINTS OF BOTH YOUR MIT AND 6-A COMPANY THESIS ADVISOR, IT IS IMPORTANT THAT YOU GIVE THEM ADEQUATE TIME (I.E. AT LEAST 45 DAYS BEFORE THE MENG SUBMISSION DEADLINE, ALTHOUGH YOU SHOULD CHECK WITH THE COMPANY AT THE BEGINNING OF THE WORK ASSIGNMENT TO SEE IF THEY WOULD NEED MORE TIME) TO REVIEW AND COMMENT ON YOUR THESIS BEFORE THEY SIGN YOUR THESIS.**
In many circumstances, thesis work may offer potentially attractive business opportunities to the graduate student and/or the 6-A company. A brief thesis hold allows the student to delay public access to research findings in order to pursue patent applications or explore other business opportunities associated with the work. A request for a thesis hold must be made jointly by the student and advisor and directly to the Dean for Graduate Education via the request form:


The Dean acts with power in approving thesis holds and requesting that the MIT Archives hold a thesis from public access for up to three months without delaying the student's graduation.

Q. 6-A Core Partners vs 6-A Affiliates. What is the difference?

A. A company can be a member of the 6-A program either as a 6-A Core Partner or as a 6-A Affiliate. From a student perspective, there are two important differences between Core Partners and Affiliates. First, students doing their internship at a Core Partner will typically receive a 6-A Fellowship through MIT during the fall term of their 6-month internship. This Fellowship pays the student’s salary, MIT tuition, and health insurance during the fall term (See the questions below for more information on what a 6-A Fellowship is). On the other hand, Affiliate companies do not offer a 6-A Fellowship but they pay the students directly during the fall term. In this case, students interning in Affiliate Companies are responsible for paying the MIT tuition and health insurance expenses directly. To make sure students interning at a 6-A Affiliate company receive the same level of benefits than the ones at a Core Partner company, the 6-A office asks 6-A Affiliate companies to set a minimum salary for their 6-A interns of $1,600 in 2019, which is typically higher than what the students who are in the 6-A program receive, in order for them to pay these additional expenses.

The second important difference between interning at a 6-A Core Partner and a 6-A Affiliate is that 6-A Core Partners will pay (through their membership fees) the tuition of the student during the spring term of his or her MEng degree, if the student has not been able to secure a Teaching Assistantship that term. Students interning at 6-A Affiliate companies do not have this guaranteed support due to the reduced membership fees paid by 6-A Affiliate companies.

Q. How do I know if a company is a Core Partner or an Affiliate to 6-A?

A. Check the website for the most up-to-date information (http://6a.mit.edu/).

Q. What if the company I want to do my M.Eng. with is not part of the program yet?

A. Please talk to us! We are adding new companies to the program every month and we may be able to bring them in as a 6-A Affiliate, as long as they are committed to providing an exceptional environment for the student to work on an exciting thesis project. It is typically easier to overcome the administrative hurdles of bringing a new company into the program if the student has already done an
Q. **What is the 6-A Fellowship?**

A. Most 6-A Core Partners offer a 6-A Fellowship to 6-A graduate students in lieu of salary after the first three-months of their six-month internship. This 6-A Fellowship gives 6-A graduate students essentially the same benefits as full-time on-campus research assistants receive: one-term full tuition and one term medical insurance and stipend while interning at the company. The 6-A Fellowship also guarantees a Teaching Assistantship appointment or tuition support during the last term of their M.Eng. year, when they are back to campus full time. Lincoln Laboratory and Draper offer a Research Assistantship instead of 6-A Fellowship, but the benefits are similar.

For most 6-A graduate students, the 6-A Fellowship has more value than receiving salary during an academic term. Please note that, typically, you receive a salary during the summer term, not a Fellowship (except for Draper which offers a summer Research Assistantship).

If your 6-A company participates in the 6-A Fellowship Program (i.e. it is a 6-A Core Partner) and you have no other Fellowship or other financial support (e.g. your 6-A company is not planning to pay you directly after the summer term), you must send the 6-A office the following signed and dated statement by the drop-date of the academic term before the Fellowship is desired:

“I have no other fellowship support during the (year) (Summer, Fall or Spring) term and would like to receive the 6-A Fellowship in lieu of salary.”

_____________________________  __________________________
Signature                  Date
Q. Do I have to pay tuition while I’m working at the 6-A company?

A. Yes and no. Additional tuition is not charged for the required summer session registrations for undergraduate students, but reduced tuition is due for non-Draper and non-Lincoln Laboratory 6-A graduate students during summer and regular academic year term work assignments. Non-Draper and non-Lincoln Laboratory 6-A Core Partners generally offer financial assistance to 6-A graduate students through the 6-A Fellowship Program, while Draper and Lincoln Laboratories generally offer regular MIT Research Assistantships.

6-A Affiliate companies pay the student directly (i.e. they are not involved in the 6-A Fellowship program) and therefore the student is responsible for paying his/her tuition and health insurance (if applicable) directly to MIT. The 6-A office asks 6-A Affiliate companies to set a minimum salary for their 6-A interns of $1,600 in 2019, which is higher than what the students who are in the 6-A Fellowship program receive, in order for them to pay these additional expenses.

Keep in mind that 6-A undergraduate students are still responsible for the regular two semester academic year MIT tuition.

If for some reason the 6-A student does not complete the M.Eng. thesis on time, tuition must be paid for later terms while the thesis is still being completed. If MIT enrollment has to be extended beyond the normal period, additional terms of registration will be billed at the prevailing rates for regular term and/or Summer Session tuition.
Appendix A.
Tuition in 6-A M.Eng. Program

TO: 6-A Graduate Students working in companies that are Core Partners of the 6-A Program

FROM: Professor Tomás Palacios, VI-A Director

DATE: September 17, 2018

SUBJECT: M.Eng. Thesis Assignments, Tuition, Registration, and Graduate Financial Support

NON-LINCOLN LAB AND NON-DRAPER LAB 6-A GRADUATE STUDENTS

Tuition and Registration

There are special tuition rates for graduate students on internships if no courses are taken while on 6-A work assignment. Graduate students who are on off-campus internships are charged tuition equal to 35% of regular tuition. This charge applies during the summer as well as during the fall and spring terms, when on 6-A assignment. Thus, during the 2018 summer session, the full tuition will be $2,160. For the 2018-2019 fall and spring terms, the full tuition will be $25,760 per term and for the term you will be away on 6-A assignment, you will be billed $9,015. During a graduate term on campus you will be billed the full tuition of $25,760. Tuition charges for summer, fall and spring terms of your M.Eng. year will be paid by some combination of the 6-A Fellowship Program and by an EECS Teaching Assistantship during an on-campus term, generally the Spring Term of the M.Eng. year, if funds are available, if you follow the required procedures described in this memorandum, and if you are not receiving any other financial support such as a research assistantship or other scholarship.

Graduate 6-A students while on 6-A work assignments who register for MIT courses in addition to their internship registration typically (6.921, 6.922, 6.951, 6.ThM) are also charged the special student per unit rate ($800/unit during the 2018-2019 academic year) up to the maximum term Fall or Spring tuition charge of $25,760. That is, 35% tuition plus the $800/unit charge cannot exceed the full tuition ($25,760) for the term. A 12 unit course would then cost $9,600 and any course work registration of 21 units or more will result in a full tuition charge of $25,760 for which $9,015 is paid by the 6-A Fellowship and the remainder of $16,745 due to course units is paid by the 6-A student. The 6-A Fellowship will not pay for any subject units so 6-A students must plan their graduate program carefully so that courses are only taken when on campus when full tuition is already charged so that there are no additional charges for courses.

You should generally register for 6.921 or 6.922 corresponding to whether your 6-A summer work assignment is your first or second as a pre-M.Eng. student and 6.951 for a fall or spring assignment as a graduate M.Eng. thesis student. You also need to register for a total of 24 units of 6.ThM for your M.Eng. thesis work before you graduate which is usually best distributed as 12 units/term over your fall and spring terms of your graduate M.Eng. year.

6-A Fellowship Program (Core Companies)

The 6-A Fellowship Program for non-Lincoln or non-Draper Lab 6-A graduate students provides both a scholarship computed to cover full tuition and medical insurance for one term, plus a stipend for one term that is identical to those available to on-campus research/teaching assistantships and comparable to fellowship recipients. In lieu of salaries during the graduate work term at the 6-A company, typically fall term, companies who offer the 6-A Fellowship will provide funds to MIT in the amount sufficient to match research/teaching assistantships available to EECS graduate students at MIT.
For 2018/19 the estimated cost of a 6-A Fellowship will be:

<table>
<thead>
<tr>
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<th>Fall Term</th>
<th>Spring Term</th>
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<tr>
<td>1 term full tuition</td>
<td>$25,760.00</td>
<td>$25,760.00</td>
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<tr>
<td>½ annual medical insurance (est.)</td>
<td>$1,310.00</td>
<td>$1,310.00</td>
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<tr>
<td>1 term stipend</td>
<td>$14,413.50</td>
<td>$14,413.50</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>$41,483.50</strong></td>
<td><strong>$41,483.50</strong></td>
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</table>

This 6-A Fellowship will be awarded to 6-A graduate students when on 6-A work assignment. The 6-A Fellowship is awarded for the period of one academic term which for the fall 2018 term corresponds to the dates September 1, 2018 – January 15, 2019. Students who already receive tuition support from other sources, such as Fellowships, or for other reasons may choose to decline the 6-A Fellowship and continue to receive competitive salaries instead while on work assignment at their 6-A Company.

To receive additional financial support from EECS during an M.Eng. term, typically the spring term of the M.Eng. year, when not on 6-A work assignment and you are taking classes and/or doing M.Eng. thesis work on-campus, you must apply for an EECS Teaching Assistantship (TA) in at least 4 classes, if you only need two courses or less to graduate and must accept it if offered. Note that a TA can at most take two courses, so it is important for you to plan your courses so that no more than two courses need to be taken to meet graduation requirements when you apply for a TA. If you are in your last term and need more than two courses to graduate the maximum amount of 6-A support will be any remaining funds in your 6-A Fellowship, typically around $14,585. 6-A M.Eng. students are encouraged to do a TA because of the great value of such teaching experience to their educational and professional development. In addition, a TA provides full tuition and medical insurance plus a $14,413.50 taxable stipend, in total worth about $39,000 in 2018-19 as given in Table I above. **To maximize your chances of getting a TA, it is very important to contact the faculty members who will be teaching the classes you would like to TA for by the end of September 2018.** These professors will be the ones selecting the TA’s for their classes, and it is always useful if you have introduce yourself to them in advance.

If you need more than two courses to complete your M.Eng. program, do not apply for a TA if you want to finish your M.Eng. program on time. If you decline an offered TA, the most you can receive is a partial tuition payment from 6-A of any remaining monies in your 6-A Fellowship funded by your 6-A company, typically about $14,585. If you apply for a TA in at least 4 classes and have two courses or less required to complete your M.Eng. program but do not receive a TA appointment, please contact the 6-A office by January 1st, as we may be able to help. If you need three or more courses to graduate and still want to be a TA, you must complete the remaining courses in future terms. Remaining M.Eng. requirements can be taken in future terms but with no 6-A financial support, although RA and TA support is allowed.

**Lincoln Laboratory 6-A Graduate Students**

Lincoln Laboratory 6-A Graduate Students should generally not register during a summer assignment and should register for 6.991 as a research assistant (RA) and 12 thesis units during fall and spring terms. This way you will receive a competitive salary during the summer and a RA during fall and spring terms.

**Draper 6-A Graduate Students**

Draper Laboratory 6-A Graduate Students should generally register for 6.991 as a research assistant during summer, fall, and spring terms. This way you will receive an RA as a Draper Fellow for all three graduate terms. You should generally register for 12 thesis units during fall and spring terms. This way you will receive a competitive salary during the summer and a RA during fall and spring terms.

If you have any further questions about any aspect of the 6-A Program, please contact the 6-A Director, Professor Tomás Palacios, at tpalacios@mit.edu.
Appendix B.
Calendar of Events 2018
6-A Fall Recruitment

### September 2018

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<th>SUN</th>
<th>MON</th>
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**September 17, 2018**
Orientation and Open House
Haus Room, 36-462
5:00 PM - 6:30 PM

**September 20, 2018**
Career Fair
Stata Center Building 32, Vest Student Street
3:30 PM - 6:30 PM

### October 2018

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**October 1, 2018**
6-A Applications Due
4PM on line or in the 6-A Office 38-409H

**October 29, 2018**
6-A Business Meeting for Company Representatives
Jackson Room, 38-466
4:00 PM - 5:00 PM

Social and Company Open House
R & D Commons, 32G-410
5:30 PM - 7:00 PM

**October 30-31, 2018**
Company Interviews
Morss Hall, Building 50
9:00 AM - 5:00 PM
campus map - 6-A Interviews being held
in Morss Hall
massachusetts institute of technology • 77 massachusetts avenue • cambridge, ma 02139 • 617-253-1000

Your query for Morss Hall returned:

Google Search Results

Walker Memorial
Building 50
142 Memorial Drive

Notes
November 2018

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May 27-
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Summer Work Period

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June 7, 2019
MIT Commencement

CONGRATULATIONS
6-A GRADUATES!
Appendix C.
Interviewing Tips

Advance knowledge about a company's business impresses an interviewer and avoids need to repeat information that is already available in the brochure. It is important that as much of the interview period as possible be devoted to a discussion of your qualifications and professional interests. Keep in mind that you only have thirty minutes to convince the interviewer that you should be selected for 6-A. You can learn more about the 6-A program and the companies by viewing the 6-A home page at http://6a.mit.edu/

Many of the 6-A companies have their own home pages, which are linked from the Participating Companies page

http://6a.mit.edu/companies.

Two other excellent opportunities for gathering information, prior to the interviews, are the 6-A Open House and the Company Open House.

For more tips on interviewing, visit the MIT Global Education & Career Development web site at

Appendix D.
Special Advantages for International Students

International students attending MIT are eligible to apply to the 6-A Internship Program. However, they should be aware of special conditions imposed by the U.S. Citizenship and Immigration Services (USCIS) and by the employment policies of the companies participating in the Program.

Because 6-A is a regular educational program, work assignments under Curricular Practical Training (http://iso.mit.edu/immigration/emp_f1_cpt.shtml) do not count against Optional Practical Training time (http://iso.mit.edu/immigration/emp_f1_opt.shtml).

Some of these conditions are described below; specific information can be obtained by contacting the MIT International Students Office (ISO), room 5-133, or by visiting the ISO web site at http://iso.mit.edu/

6-A & Curricular Practical Training

Because the 6-A Program gives academic credit for work performed at the participating companies, International Students with valid VISA status may be eligible for the 6-A Internship Program. Once selected into the 6-A Program, authorization to work for a participating 6-A company is not automatic – students must apply for it through the International Student Advisor. International Students should consult with one of the International Student Advisors in the International Students Office (5-133), as soon as you are accepted into the 6-A Program.

6-A Company Policies

The companies participating in the 6-A Program determine their own hiring policies regarding International Students. A 6-A Cooperating Company Brochure is issued each year, at the start of the spring recruiting period, in which each company states its employment policy as to International Students. Many, but not all, of these participating companies have restrictions (security clearance, green cards, etc.), which limit the hiring of International Students. Consequently, competition amongst those fewer companies that do have openings for such students becomes exceptionally keen.

Admission to 6-A

Upon an International Student’s acceptance by a company to the 6-A Program, the EECS Department will notify MIT’s International Students Office (ISO). It becomes the responsibility of the student to make an appointment with the ISO and to apply for Curricular Practical Training by filling out the required forms. This process must be repeated for each subsequent employment period (i.e., 6-A Work Assignment). Students who start working without authorization lose their legal status in the United States.

If you have any questions, the 6-A Office (38-409H) and the International Students Office (5-133) will gladly assist you in any way they can.
Appendix E.
Nondiscrimination Policy

The Massachusetts Institute of Technology is committed to the principle of equal opportunity in education and employment. The Institute prohibits discrimination against individuals on the basis of race, color, sex, sexual orientation, gender identity, pregnancy, religion, disability, age, genetic information, veteran status, or national or ethnic origin in the administration of its educational policies, admissions policies, employment policies, scholarship and loan programs, and other Institute administered programs and activities; the Institute may, however, favor US citizens or residents in admissions and financial aid.*

The Vice President for Human Resources is designated as the Institute’s Equal Opportunity Officer. Inquiries concerning the Institute’s policies, compliance with applicable laws, statutes, and regulations, and complaints may be directed to Lorraine Goffe, Vice President for Human Resources, Room NE49-5000, 617-253-6512. In addition, inquiries about Title IX (which prohibits discrimination on the basis of sex) may be directed to the Institute’s Title IX coordinator, Sarah Rankin, Room W31-223, 617-324-7526, titleIX@mit.edu. Inquiries about the laws and about compliance may also be directed to the US Department of Education, Office for Civil Rights, Region I, 5 Post Office Square, 8th Floor, Boston, MA 02109-3921, 617-289-0111, OCR.Boston@ed.gov.

* The ROTC programs at MIT are operated under Department of Defense (DoD) policies and regulations, and do not comply fully with MIT’s policy of nondiscrimination with regard to gender identity. MIT continues to advocate for a change in DoD policies and regulations concerning gender identity, and is committed to providing alternative financial assistance under a needs-based assessment to any MIT student who loses ROTC financial aid because of these DoD policies and regulations.
Appendix F.
6-A Core Partner Companies

For the most updated information on the 6-A Core Partner Companies, and for the list of Affiliate Companies, check the 6-A website:

http://6a.mit.edu
Analog Devices, Inc. (ADI) is a world-leading semiconductor company specializing in high-performance analog, mixed signal and digital signal processing integrated circuits (ICs). ADI’s products play a fundamental role in converting real-world phenomena such as temperature, motion, pressure, light and sound into electrical signals to be used in a wide array of applications. Examples of current applications include high-performance audio and video, wireless and wireline communications, industrial controls and factory automation, automotive entertainment and safety systems, and medical and diagnostic instrumentation.

In 2017, Linear Technology became part of Analog Devices. With the power of the combined product portfolios, customer bases, world-class engineering, manufacturing, and sales and support teams, Analog Devices is now the premier global high-performance industry leader across all major analog segments. Analog Devices’ broad and cutting edge power product portfolio is now marketed as Power by Linear. The combination of the two analog-leading companies will produce unprecedented possibilities for innovation and growth. The combined company completed fiscal year 2018 with $6 billion in sales and a worldwide workforce of approximately 15,000 employees. Our products are now ubiquitous in the most demanding electronic circuits. Prominent examples are smart phones, drones, autonomous vehicles and surgical robots. Join ADI and design ahead of what’s possible.

INTERNSHIPS AT ANALOG DEVICES FOR MIT VI-A STUDENTS

Analog Devices, Inc. (ADI) is a world-leading semiconductor company specializing in high-performance analog, mixed signal and digital signal processing integrated circuits (ICs). ADI’s products play a fundamental role in converting real-world phenomena such as temperature, motion, pressure, light and sound into electrical signals to be used in a wide array of applications. Examples of current applications include high-performance audio and video, wireless and wireline communications, industrial controls and factory automation, automotive entertainment and safety systems, and medical and diagnostic instrumentation.

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Visit analog.com
WHY CHOOSE ANALOG DEVICES?

The internship experience enhances students’ ability to identify and grasp important concepts integral to analog and mixed signal integrated circuit design when students return to classes at MIT. Because most of our products are designed by individual engineers, you won’t get lost as a small part of a huge project team. Over the last five years, Analog Devices hired more new college graduates from MIT than from any other school. Many started their careers with Analog Devices as an intern.

VI-A ASSIGNMENTS

Student assignments are determined by matching the student’s interests with our program needs. Positions are available in ADI’s Analog/Mixed Signal groups as well as in the Power Engineering group. Assignments may be in IC Design Engineering (transistor and chip level design, modeling and prototyping), Applications Engineering (system design and evaluation of application circuits), and Software Engineering (software design to simulate and model circuits, microcontroller programming and more).

EXAMPLES OF VI-A PROJECTS

- Translation of an RF modulator design from an all-bipolar process to BiCMOS.
- Design of software to automate evaluation of voltage-controlled oscillators (VCOs).
- Instrumentation and evaluation of an on-chip buffer for a new analog-to-digital converter (ADC).
- A nanopower IC for the longest battery life in medical devices.
- An ultralow quiescent current buck switching regulator IC for the next generation of high efficiency cars and trucks.
- A new architecture for USB powered battery chargers for tablets and smart phones.
- A new architecture for an RGB LED driver with independent PWM control and fast settling time for 3D cinema and TV applications.
- Design of data-dependent jitter elimination circuit for high speed serial links.
- Integration of a switching power supply into a deep submicron CMOS process.
- Design of a high voltage, high output current drive operational amplifier.

RELATED COURSEWORK

Classes that give a good idea of the typical work done at ADI are listed below. If you loved any of these classes, then you would make a good fit at Analog Devices!

- Undergraduate courses: 6.002, 6.003, 6.011, 6.012, 6.101, 6.102, 6.111
- Advanced undergraduate/graduate classes: 6.301, 6.302, 6.331, 6.374, 6.376, 6.775, 6.776

ASSIGNMENT LOCATIONS

We have local design centers in:
- Wilmington, MA
- North Chelmsford, MA
- Lyric Lab in Cambridge, MA
- Silicon Valley Headquarters in Santa Clara, CA.

Other opportunities may exist in our regional offices:
- Greensboro, NC
- San Jose, CA
- Colorado Springs, CO
- Phoenix, AZ
- Limerick, Ireland
- Shanghai, China

BENEFITS

Analog Devices participates in the VI-A Fellowship Program which provides tuition, medical insurance and a stipend during the final term after the senior year while students are finishing their Master’s thesis research at ADI. Housing and/or transportation stipends are also provided.

INTERN ACTIVITIES

VI-A interns are part of ADI’s larger summer internship program, and enjoy summer intern activities such as bowling, work/life seminars and intern showcase day. ADI also organizes seminars by members of the senior technical staff to introduce students to product areas outside their assignment.
TESTIMONIALS

“Doing 6-A with Analog Devices has provided me with a rich experience in circuit design. At Analog Devices, there are plenty of people who you can learn from, and they are always willing to help. Coming in with a rich background from MIT, my 6-A project enhanced it with applications of some of the concepts I learned in school. You will probably have a good project at Analog Devices where you will learn plenty of new things.”

-George Kakuru, VI-A Alumnus (2016)

“Through the VI-A program I found an academic home away from MIT at Analog Devices. ADI gave me the opportunity to work on a cutting-edge topic, taking circuit design skills I gained in 6.012, 6.301, and 6.775 and applying them toward a larger project. It is a great work environment with many MIT alumni and very supportive mentors.”

-Alec Poitzsch, VI-A Alumnus (2014)

“VI-A projects at Analog Devices give students a true experience as an Analog IC designer. My project was fabricated in silicon, so I not only got to work with the design in simulation, but also in the lab. I had the opportunity to solve real design challenges, both at the transistor and application level, which led to quality designs which were directly incorporated into my first products as a full-time employee. The resources and responsibility I received as an intern at Linear gave me a unique experience I could not have gotten in the classroom, which was integral to learning that a career as an Analog IC designer really was for me.”


FOREIGN STUDENTS

International students are welcome with a valid F-1 or J-1 visa. A security clearance is not required. For some positions, ADI may have to obtain export licensing approval from the US Department of Commerce – Bureau of Industry and Security and/or the US Department of State – Directorate of Defense Trade Controls. As such, applicants may have to go through an export review process.

DRUG-FREE WORKPLACE REQUIREMENTS

Analog Devices does not have a policy on drug testing or screening.

EQUAL OPPORTUNITY EMPLOYER

Analog Devices is an Equal Employment Opportunity/Affirmative Action Employer M/F/D/V.

MORE INFORMATION

To learn more about Analog Devices, please visit:
www.analog.com/college

For more information about VI-A at ADI, please contact:
Natalia Hing natalia.hing@analog.com
Career Opportunities at Cadence for MIT 6-A Students

Company Overview
Cadence plays a critical role in creating the technologies that modern life depends on. We are a global electronic design automation company, providing software, hardware, and intellectual property to design advanced semiconductor chips that enable our customers to create revolutionary products and experiences.

Thanks to the outstanding caliber of the Cadence® team and the empowering culture that we have cultivated for over 25 years, Cadence continues to be recognized by Fortune Magazine as one of the 100 Best Companies to Work For. We have differentiated ourselves through our shared passion for solving the world’s toughest technical challenges, our dedication to pushing the limits of the industry, and our drive to do meaningful work.

6-A interns will be a part of our global community of interns and recent graduates called CHIPs (College Hires and Internship Programs). CHIPs provides the opportunity to meet interns from different business groups, participate in formal and informal networking events, and attend learning and development seminars.

6-A Assignment Locations
Cadence is headquartered in San Jose, CA. The company has offices in Chelmsford, MA; Austin, TX; Columbia, MD; Endicott, NY and Pittsburgh, PA; as well as other centers around the globe. This year, Cadence is hiring interns in Chelmsford and possibly other U.S. offices.

Thesis Topics
We have several areas of interest that can be initiated from a thesis and then transformed into an actual product, most of these will also result in patent work by the student.

- Modeling of circuits that cross substrate boundaries, and developing fast extraction and simulation models for cross-fabric (PCB/package/IC) circuitry
- Novel optimization techniques for solving otherwise NP-complete problems
- All aspects of photonics design, including layout, modeling, and simulation
- Using cloud computing to build/test/deliver software modules.
Foreign Student Employment
International students with a valid F-1 or J-1 are welcome.

Security Clearance Requirements
The majority of our positions don't require a security clearance. However, depending on the position, a function of the job with Cadence may require access to data that is restricted to U.S. export regulations. If the position offered does require the individual to be able to access export-restricted data, then the offer of employment is also contingent on the individual's ability to access the data in accordance with the regulations, which is based on their residency status. If they are not a “U.S. Person” (citizen, green card holder, or protected refugee), an export license may be required before access to the data is granted.

Drug-Free Workplace Requirements
Cadence is a drug-free environment and does not have a policy on drug testing or screening.

Housing and Transportation
Most assignments will be in our Chelmsford, MA, office, 20 miles from MIT/Boston. Public transportation is available from Cambridge.

Financial Assistance
Cadence participates in the 6-A Fellowship Program, which provides tuition, medical insurance, and a stipend for one term.

Equal Employment Opportunity Policy
Cadence is firmly committed to Equal Employment Opportunity.

More Information
To learn more about Cadence, please visit www.cadence.com
As a not-for-profit research and development company, Draper focuses on the design, development and deployment of advanced technological solutions for the most challenging and important problems facing the nation and the world. Whether formulating a concept and developing each component to achieve a field-ready prototype or combining existing technologies in new ways, Draper's multidisciplinary science & engineering teams deliver new capabilities to government and commercial customers.

Draper's nearly 80 years of engineering credentials include continuous support for the nation's strategic deterrence mission. A primary focus of our programs has been the development and early application of advanced guidance, navigation, and control technologies to meet the needs of the U.S. Department of Defense and NASA. Notable among Draper's achievements was the design and execution of the Apollo Guidance System that took humans to the moon and back on every Apollo mission.

We have since expanded our competencies to include disciplines ranging from precision instruments and microsystems design/fabrication to image & data analytics and materials engineering to address ever evolving needs in defense and national security, space systems, transportation, biotechnology and medicine. Examples of our work are at www.draper.com/news.

We are conveniently located in Technology Square a block from the MIT campus. Students will find a variety of opportunities for research ranging from concept development and analysis (including simulation) through design and development of applications of advanced technology. Further information on Draper can be found at http://www.draper.com.

Our 14 Engineering divisions (which are organized into four Engineering Directorates - Systems, Hardware, Software and Algorithms, Materials and Microfabrication) engage over 100 students at any given time through a variety of programs, including the MIT VI-A program. Typically we engage 1-3 new VI-A students each year, and we tailor the student project/assignment to the mutual interests of the student and the staff supervisor at Draper.

This year we expect new VI-A student opportunities in autonomous systems, around guidance and navigation, collaboration, and dynamic spectrum access.
General information

- This program is open to US Citizens Only.
- Draper may be required by Federal law or regulations to test job applicants and employees in sensitive positions for the use of illegal drugs
- Tuition and stipend will be covered according to MIT and Draper agreement.

Recently completed thesis topics

- An Integrated Framework for the Vulnerability of Complex Supply Chain Systems
- Mission Planning for Human-Robot Teams Using Adaptive Human Performance Models
- Miniaturized Single Crystal Silicon Solar Cell Array for a MEMS Power Source
- Constrained Optimization for Hierarchical Control System Design
- Extended Kalman Filter Residual Analysis
- Analysis of the Applicability of a General Purpose Operating System for Time Critical Tasks
- Orthogonal Polarization Fiber Optic Gyroscope with Improved Bias Drift
- Learning Control for a Class of Discrete-Time, Nonlinear Systems
- A Demonstration of Useful Electric Energy Generation from Piezoceramics in a Shoe
- Control Interface for High Velocity Teleoperated Robot
- Modeling and Analysis of Software Specifications for an Autonomous Aerial Vehicle
- A Precursor to a Balance Prosthesis via Vibrotactile Display
- Collaborative Concurrent Mapping and Localization
- Active Tremor Control of Human Motion Disorders
- False Arrhythmia Alarm Suppression
- Hydraulically-Actuated Microscale Traveling Energy Recovery
- Object Recognition, Video Tracking for Improved Object Understanding in Scenes
Our Company

First Republic Bank is a full-service financial institution that delivers personalized, relationship-based private banking, private business banking, trust services and real estate lending, as well as investment consulting and advisory services offered through its wealth management affiliates. Over its 30 year history, it has grown from a 10-employee thrift to over $93 billion in assets and 4000 employees while retaining much of its original leadership and core business model.

First Republic specializes in delivering exceptional, relationship-based service, with solid commitment to responsiveness and action, made possible by its focus on small teams, deep collective know-how and a corporate culture that encourages innovation and provides visibility to employees at all levels of the firm. Capitalizing on this model, the bank has been able to stay profitable every year since inception and expand at a rapid pace almost entirely through organic growth and word-of-mouth referrals. The bank is headquartered in San Francisco and has a large corporate presence in New York, Los Angeles, and Boston.

Who We Are - Enterprise Data and Client insights (EDCI)

In an effort to retain agility and client focus in the face of rapid growth, First Republic has been actively expanding its quantitative function over the past several years to complement its exceptional business practice.

Key responsibilities of our quant team include creative applications of machine learning, data science, user interfaces, decision science and cognitive psychology to assist following groups of stakeholders in their principal activities:

- Executive Management – to quantify, analyze, and unearth meaningful patterns in existing business practices, benchmarked by market data; inform strategic decisions; and provide actionable insights into key performance characteristics of the bank
- Business Line – to codify the “secret sauce” of the sales teams and provide an automated intelligence platform for identifying and effectively pursuing new opportunities
- Finance and Operations – to build and validate stress testing models and provide business forecasts in the areas of liquidity, credit risk, interest rates, fraud, client growth and segmentation studies

Team members are encouraged to find their niche, which – coupled with a flat reporting structure, collegial atmosphere and entrepreneurial company spirit – provide high level of visibility and ample opportunities for learning and making an impact at all levels of the organization.

Who We Are Hiring – Quantitative Analyst / Summer Quantitative Analyst

- Idea candidate has broad skillset in areas like statistics, computer science, engineering, mathematics
- Background or experience in finance, business analysis, and financial engineering is a plus, but not required as long as candidate possesses strong curiosity for and ability to quickly learn and assimilate new skills as needed
- Candidates must have an attitude of getting things done and delivering results while keeping long term goals and objectives in mind
- To supplement these sophisticated analytical capabilities, candidates need to have solid business acumen and executive-level communication
- Hiring in following locations: San Francisco, New York City and Boston
As a research and development center of MIT, Lincoln Laboratory offers 6-A students an exceptional environment for conducting research. The eight technical divisions of MIT Lincoln Laboratory perform basic research, develop devices and components, and design, construct, and test complex systems for the Department of Defense (DoD), Department of Homeland Security, NASA, FAA, and NOAA. MIT Lincoln Laboratory is located on Hanscom Air Force Base in Lexington, Massachusetts. While MIT 6-A students are pursuing their MEng degrees, they will be supported as Research Assistants at Lincoln Laboratory during the fall and spring semesters. A shuttle bus is provided so that students may commute to Lincoln Laboratory from campus.

**Major Capabilities and Research Areas**

- Advanced imaging
- Advanced microelectronics
- Advanced RF technology
- Biological/chemical agent detection
- Communication systems
- Cyber security
- Environmental monitoring
- High-performance adaptive signal processing
- Homeland protection
- Integrated sensing and decision support
- Laser communications
- Net-centric architectures
- Open systems architectures
- Optics and lasers
- Rapid prototyping
- Space situational awareness
- Speech/language processing
- Systems analysis
- Threat assessment
- Weather sensing

**Summer Housing:** Subsidized housing on Northeastern University’s campus up to 10 weeks for students whose permanent address is greater than 50 miles outside the Boston area.

MIT Lincoln Laboratory is an Equal Employment Opportunity (EEO) employer. All qualified applicants will receive consideration for employment and will not be discriminated against on the basis of race, color, religion, sex, sexual orientation, gender identity, national origin, age, veteran status, disability status, or genetic information. Since a security clearance is required by the DoD, only students who are U.S. citizens can be considered. Interested students should contact Gary Hackett, Office of Human Resources, 781-981-7056, or hackett@ll.mit.edu.

For more about our summer programs, please visit [www.ll.mit.edu/careers/student-opportunities](http://www.ll.mit.edu/careers/student-opportunities)
Past Thesis Projects of Lincoln Laboratory 6-A Students

- Wideband active antenna cancellation
- Choosing a dielectric for graphene transistors
- Automated identification for weather avoiding air traffic flows
- Designing electronics for the missile alternative range testing instrument
- Tracking system for photon-counting laser radar
- Markov chain Monte Carlo and its applications of phylogenetic tree construction
- Tracking algorithms under boundary layer effects for free-space optical communications
- Radar tracking system development
- Epidemic modeling techniques for smallpox
- Application of three-dimensional circuit integration to global clock distribution
- Dynamic Bayesian networks for the classification of spinning discs
- Low-power image-based triggering for extended operation surveillance
- Multiple region finite-difference time-domain modeling of duct cavities
- Experimental study of the frequency correlation of space-time entangled photons
- Laser speckle modeling for three-dimensional metrology and ladar
- Finite-difference techniques for body of revolution radar cross section
- A pixel-level analog-to-digital converter for the imaging array of an advanced interferometer
- Spatial filter performance on point-target detection in various clutter conditions using visible images

How to Apply

Gary Hackett
Office of Human Resources
MIT Lincoln Laboratory
781-981-7056

www.ll.mit.edu

Diversity

© Massachusetts Institute of Technology
Leadership in Data Management and Storage
Dedicated to Your Success Now and Into the Future

Make a Global Impact

Leading organizations worldwide count on NetApp for software, systems and services to manage and store their data. Customers value our teamwork, expertise and passion for helping them succeed now and into the future.

We focus our innovation to meet our customer’s most challenging data needs. They recognize the value of our best-in-class integration and commitment to openness. Our knowledge and skills help them envision, deploy and evolve their IT environments.

Our vision for a data fabric that seamlessly connects different management environments and clouds guides our innovation.

Company Culture

Creating a model company is at the heart of everything we do. This means delivering value to each community we service: customers, shareholders, employees, partners and neighbors.

We are committed to living our core values:

- Trust and Integrity
- Leadership
- Simplicity
- Adaptability
- Teamwork
- Go Beyond
- Get Things Done

The strength of our culture means that we attract the industry’s best to work for our customer’s success. As a result, we’ve earned 14 consecutive years on the FORTUNE “100 Best Companies to Work For” list.

Your Career Starts with NetApp

Are you an innovator? Do you thrive as part of a committed team? Do you love to find creative solutions to old challenges? Do you want to make an impact and help your company and your career advance together?
If you answered yes to any of these questions, consider a career at NetApp. We are the leading innovator of storage and data management solutions that accelerate business breakthroughs and deliver outstanding cost efficiencies.

**Where Could You Work for NetApp?**

- Headquarters – Sunnyvale, CA
- Research Triangle Park, NC
- Waltham, MA
- Cranberry Township, PA
- Vienna, VA
- Wichita, KS
- Boulder, CO
- Seattle, WA
- Vancouver, Canada

**Does NetApp Have a Career for You?**

Here is an overview of the many professions you will find at NetApp:

**Engineering**
- Advanced Development Research
- Software Development
- Systems Engineering
- Information Technology
- Product Management (MBA)
- Software and Hardware Quality Assurance
- Support Services

**Corporate & Sales**
- Finance
- Human Resources
- Legal Services
- Manufacturing Operations
- Marketing
- Sales
- Social Media
- Workplace Resources

**Professional Growth at NetApp**

Once you're hired on at NetApp, your success and ours is linked. You're encouraged to take the reins to drive your career along with your chosen path, and we offer several ways to help you get there –

**Professional Development:** Our in-house “university” offers everything from technical courses on administering NetApp servers to scripting in Perl.

**University Graduate Hire Program:** Designed to enhance the experiences for our University Graduates as they transition from the campus to corporate environment.

**Classroom Training:** Classes are available onsite to help you build your financial skills to help you build your financial skills to manage a budget or learn how to improve your management style and more.

**Mentoring:** Many organizations provide informal mentoring situations to boost your knowledge and productivity.

**TOAST:** Training On All Special Things is a hallmark NetApp function. You and 100 or so of your colleagues spend a day with our leadership team.
“6-2 is a rather popular direction for course VI students, because we like to know why things work and how to use them for applications. However, rarely do we get to enjoy working with systems from the ground up. Most companies have either a software or a hardware focus, so interns became experts in their piece of the puzzle, but do not necessarily need to think about the entire mechanism upon which their applications are built. With that in mind, I can say that NetApp is probably the most versatile company in the VI-A table. They are a data giant. They work at the bit level when thinking about data integrity; they work on the system level to think about robustness of their designs: they build user-end applications to make data easy to manage. Whether you are interested in hardware, software, data management, visualization, NetApp has an interesting problem from you. Oh, but let me say a word or two about NetApp’s culture, because at some point, you will be initiated into it, and you will have to carry on the message. It is a culture of learning – you will have every opportunity to interact with people who know more than you do, and they, despite having every opportunity to ignore you – will choose to help and teach you. I highly recommend NetApp for your VI-A experience.” – Rebecca, Previous VI-A Intern and current NetApp Intern

Consistently an Employer of Choice

Are you looking for an exciting opportunity to intern at one of the world’s top-ranked multinational workplaces in the United States and around the world?

In the United States, NetApp hosts a three-month summer internship program that aims to help you achieve three key goals: gain understanding about the NetApp business, gain knowledge about the specific role and organization in which you will work, and engage and socialize with the community of interns and employees in various events at NetApp sites and off-site, such as local baseball games and volunteer events.

In addition to working on meaningful, real-world projects, you will have the opportunity to participate in our formal summer internship program. You will meet directly with executives and organizational leaders across all business areas through our Summer Speaker Series. We want you to walk away from a summer internship at NetApp and decide that this is the right place for you to start or continue your career. You’ll have the opportunity to find a community that is just right for you.

A summer internship at NetApp is a great way for you to:

- Develop hands-on experience while completing your studies
- Learn from professional mentors
- Build a networking of contacts in your field
- Find a company that is a perfect place for you to build your career

Additional Benefits:

- Relocation & Housing Assistance is provided if you are qualified
- Visa Sponsorship is available if applicable
- Flexible work schedules
- Competitive salaries
- Supportive management and teammates
- Volunteer opportunities
- Beer Bash on Fridays
Appendix G.
6-A Affiliate Companies

For the most updated information on the 6-A Core Partner Companies, and for the list of Affiliate Companies, check the 6-A website:

http://6a.mit.edu
Overview

We are the leader in materials engineering solutions used to produce virtually every new chip and advanced display in the world. Our expertise in modifying materials at atomic levels and on an industrial scale enables customers to transform possibilities into reality. At Applied Materials, our innovations make possible the technology shaping the future.

Engineering Positions

Though Applied Materials nominally sells semiconductor equipment, we also sell the knowledge of the performance of this hardware. There is a large data stream collected by the tool that monitors the current performance. Engineers will typically analyze this data stream and, combined with their technical knowledge, troubleshoot problems, identify root causes and suggest design improvements to improve value to our customers, who are typically semiconductor manufacturing companies.

_Potential interns will have the following roles:_ data analysis including experimental design in order to understand tool behavior, developing methods to link the experimental data to physics-based simulations (either carried out by the intern or by team members), developing and implementing process control schemes to improve alignment to customer specs.

Knowledge of semiconductor devices and semiconductor processing is desirable, but not required.

Internships & New College Graduate Programs

Applied Materials invests in talent. Our Internship Program and New College Graduate Programs are designed to train and engage emerging technology professionals in a variety of disciplines and assist with the transition from academia to a corporate environment. We provide networking, leadership, and team building opportunities, giving participants both valuable business contacts and practical skills.
FAQs

Where are your opportunities located?
Santa Clara, California,
Austin, Texas
Gloucester, MA

Are there any security clearances or drug tests required to apply to Applied Materials?
Interns go through the formal interview process and will be asked to complete a basic employment application. Interns are not required to have security clearances. *Only our Austin, Texas location requires interns to complete drug tests.*

Does Applied Materials hire international students?
Yes, Applied Materials will hire and sponsor international interns and full-time employees. **Acceptable Visas include:** J1, F1, and H1B

Does Applied Materials assist with housing or relocation?
A housing stipend will be provided for non-local students, which is meant to reimburse interns for expenses related to securing travel and temporary housing arrangements. We also provide ways for our interns to connect with each other (as appropriate) in case interns are interested in having a roommate for the summer.

Why Applied Materials?
Optics Engineer Intern  
Santa Clara, CA  
Summer 2019

Applied Materials, Inc. is the global leader in materials engineering solutions used to produce virtually every new chip and advanced display in the world. Our expertise in modifying materials at atomic levels and on an industrial scale enables customers to transform possibilities into reality. At Applied Materials, our innovations make possible the technology shaping the future.

Applied Materials’ CTO office is searching for an intern to join our Engineered Optics team in summer 2019. We are focusing on the design, manufacturing and characterization of the AR (Augmented Reality) display units, including light source, relay optics, beam combiner etc. The position will entail the following:

- Design, develop and operate optical metrology tools for optical components of AR glasses
- Assist with optical simulation on diffractive optical elements

Requirements
- Student must be pursuing a Master’s degree program in Electrical and Electronic Engineering, Physics, Materials Science, or a related field
- Student must be in good academic standing at their university
- Experience in circuit design, display chip control and good understanding of optics
- Quick learner

Applied Materials is committed to diversity in its workforce including Equal Employment Opportunity for Minorities, Females, Protected Veterans and Individuals with Disabilities.
Cambridge Mobile Telematics’ (CMT) mission is to make roads safer around the world by making drivers better. The DriveWell platform, our complete telematics and behavioral analytics solution, provides actionable insights on driver behavior and vehicle dynamics to individuals, auto insurers, vehicle fleets, auto makers, wireless carriers and government agencies. With over a billion miles of driving data, our users have an average reduction of 35 percent in phone distraction, 20 percent in hard braking and 20 percent in at-risk speeding all within less than 30 days of using the program.

CMT employees thrive in a collaborative and fast-paced work environment; are excited to learn and problem-solve; and are committed to helping end-users become smarter, safer drivers.

Smarter Drivers. Safer Roads.
We are currently hiring full-time employees and interns for the following teams:

**The cloud team** is the backbone of CMT’s programs. It provides support for the mobile app and runs the processing pipelines. Team members will have the opportunity to enhance our customer-facing web portal, develop server software running on AWS and improve the scalability, security and reliability of our server infrastructure.

**The data team** works on the forefront of data science; building complex machine learning models to capture dangerous driving behavior, and turning raw data into actionable insights. You will leverage big data that enables customers and internal engineers to create algorithms that produce actionable insights.

**The mobile team** creates the interface used by millions of users all over the world. You will push the boundaries of current mobile platforms and attack complex challenges such as optimizing driving detection while minimizing battery consumption.

**The quality assurance team** ensures a positive customer experience. Team members translate product requirements into testable hypotheses and debug business processes and technology - exposing hidden assumptions and risks.

**The IoT team** develops the DriveWell Tag - a cost-effective Bluetooth tracking device. Members work hands on with Bluetooth hardware and signal processing antennas to more accurately record driving events.

**The operations and support team** is the lifeblood of CMT’s employees and customers. It maintains internal infrastructure and is a line of support for employees, customers and occasionally end users.

**The product team** requires interdisciplinary problem solving and planning. Along with guiding customers through the implementation process, the product team finds solutions to customer needs, defines new features for existing products and brings new products to the market.

**The marketing and design team** develops CMT’s brand and market strategies. On the marketing team you will create content, build audiences, manage campaigns and track customer success. As a member of the design team, you will help with the visual design of our app UI/UX, web portal and website; and create design components such as packaging, presentations and promotional materials.

We’re looking for curious and energetic individuals to join us. Interested? Apply at [cmtelematics.com/jobs](http://cmtelematics.com/jobs).
About Cell Signaling Technology

Cell Signaling Technology (CST) is a private, family-owned company, founded by scientists and dedicated to providing the world’s highest quality, innovative research and diagnostic products to accelerate biological understanding and enable personalized medicine. The mission of our Bioinformatics Department is to foster excellence in the art of combining data integration, software development, computer science, mathematics, and artificial intelligence, in order to decipher complex biological processes, enhance product development, and contribute to translational research.

VI-A at CST

Our employees operate worldwide from our U.S. headquarters in Massachusetts, and our offices in the Netherlands, China, and Japan. This year, CST is hiring one VI-A student for the Bioinformatics Department in Danvers, Massachusetts.

VI-A Projects

Student assignments are determined by matching the student’s interest with our research projects. Examples of potential projects include:

- Evolutionary analysis to understand health and disease
- Statistical interpretation of cancer mutations and their impact on the signaling network
- Protein structure prediction and design
- Implementation of new visualization tools in PhosphoSitePlus® (phosphosite.org) - the world’s most comprehensive database of PTM sites

Drug-Free Workplace Requirements

CST does not have a policy on drug testing or screening.

Transportation

Our headquarters is located in Danvers, MA, about 25 miles driving distance from Cambridge or Boston. Public transportation is available; however access to a car may be more convenient.

Financial Assistance

As a 6A affiliate CST provides a salary for the summer and on-site semester.

Additional Information

For more information about VI-A at CST, contact Dr. Florian Gnad (florian.gnad@cellsignal.com) or Chris Falling (cfalling@cellsignal.com).

Additional Resources

The following articles provide more information about related research:


CST: Rooted in Science

To learn more about CST, please visit www.cellsignal.com.
Whether you are buying new or used, plain or luxurious, commonplace or rare, trendy or one-of-a-kind – if it exists in the world, it probably is for sale on eBay. Our mission is to be the world’s favorite destination for discovering great value and unique selection. We give sellers the platform, solutions, and support they need to grow their businesses and thrive. We measure our success by our customers' success.

As the largest, and most diverse, distributed, global open marketplace in the world, it is the one place where anyone or any group (seller to master seller) can self describe or even self create and sell anything in any condition at any scale, have anyone or any group (buyer to master buyer) engage in multiple purchase mechanism from auctions to fixed price, then have multiple payment and logistic mechanics of getting the goods from the seller to the buyer, and do this globally in an ever evolving global ontology of goods. And then - there is a develop platform that lets anyone integrate through our API’s to bring this global open marketplace platform to all apps interested - making this the most powerful contextual open marketplace platform. eBay faces unique opportunities and challenges in how it builds and deploys technology

- In fact, technology has been the chief enabler in establishing eBay as a global commerce leader – whether that was being an early pioneer in mobile, or developing new shopping experiences that allow people to shop for their version of perfect – anywhere, anytime.
- eBay is again leading the next wave of commerce innovation. We are developing and embedding AI and machine learning into every facet of our business and systems to revolutionize the shopping, selling and developer experience.
- These investments are already paying off, benefiting both buyers, sellers and developers.
- eBay aims to be the preferred global open marketplace destination and platform, offering a simple and personalized shopping experience in the sea of sameness that is today’s commerce environment.

Within eBay there are several domains that work with AI and Machine Learning. Below are some of the technical domains within eBay where we have internship opportunities.

**Merchandising**

Merchandising, we are building some of the most relevant and compelling personalized recommendations to help guide our users on their shopping journey. Below are some specific projects within Merchandising where we have internship opportunities.

**Bundling**

We’re creating a bundling experience for eBay, which enables users to purchase multiple complementary items in one click. This presents an interesting algorithm & data science problem, where we must create a scalable algorithm to generate high-quality, relevant bundles. For example, if a user is viewing an iPhone, we may want to recommend an iPhone case or
iPhone charger. Though this may sound like a traditional collaborative filtering problem, given eBay’s unstructured data, and the nature of our fleeting inventory, collaborative filtering alone isn’t sufficient. As a result, we use deep learning to leverage historic behavioral data, as well as other structured data, to identify complementary items that can be recommended together.

**Personalization**
The goal of this project is to leverage user information (i.e. their past shopping behavior, interests, etc) to create a tailored shopping experience specifically for our users. This presents an interesting challenge, since we have large amounts of user activity, and since user’s tastes change over time. We want to be able to recommend the right items at the right time, and to be able to do this at scale for our hundreds of millions of unique users.

**Search Science**
In Search Science we focus on using a combination of machine learning and large scale data mining to improve the Buyer’s Search experience on eBay. We leverage billions of user behavior events and Search behavior patterns to build large scale models that provide the most relevant and competitive inventory available on our site. Our goal is to help users navigate to and find the best possible inventory eBay has to offer them. When someone is searching for something on eBay, we are responsible for deciding which of our hundreds of millions of listings to show to them, and how to help them to refine to the best possible query to result in a successful search session. We utilize rigorous statistical analysis to directly measure our business impact via user behavior, relevance, and transactional metrics for all of our new algorithms.

- **Recall and Query Understanding**: When a user issues a query on eBay our first goal is to understand what it means. We utilize NLP techniques, behavioral data, and query understanding to first identify what product or type of item the user is interested in. In order to bring back as much relevant inventory as possible for the user to choose from, we utilize synonyms, NLP, phrasing, etc to generate a comprehensive recall set for the search. This recall basis is extremely important because these are the only results that our ranking algorithm has to choose from to display to the end user.
- **Navigation and Suggestions**: Once a user issues a query, and we have identified their main intent, we want to provide them the best path forward. We use extensive user behavior modeling techniques to find popular related searches and refinements to help our users navigate along their intent. For example, if a user searches for an iPhone 6s we can identify what price ranges transactions typically happen in. We can leverage that data to help users constrain to a suitable price range for them. If a user searches for “shoes” we can leverage behavioral data to identify and present the top brands for them to navigate to quickly and efficiently. The goal is to help the user navigate as efficiently as possible through the vast search space to refine to the recall set that most exactly fits their intent.
- **Ranking**: For any search issued by a user on eBay Ranking defines the order in which the recall set is presented to the user. We extensively examine and mine user behavior
patterns to identify features that result in engagement on our search pages. Users typically focus on the top results and so it is crucial that we get the top results correct. We utilize state of the art machine learning techniques to build models that can predict user behavior on our items. The job of search ranking is to balance across many dimensions such as trust signals, competitive pricing, engagement features, relevance, and many more to ensure our buyers find what they are looking for and have a great buying experience. We utilize machine learning, large scale data mining, and statistical analysis extensively to help guide us in the right direction and balance the trade-offs between features.

Image Search
We allow users to specify their queries using images and help locate the most relevant items from over a billion items that are available for sale on eBay at any point in time. This is a significant engineering and Computer Vision challenge to overcome at eBay scale.

Shopping Science
Shopping Science focuses on relevance and ranking for user generated content, evidence signal based recommendation systems, query understanding as well as graph based navigation and discoverability algorithms for search engine optimization. The work involves mining insights, text mining, query understanding, end to end data science, applied research using machine learning, artificial intelligence, NLP and information retrieval principles. Some sample projects include:

- **Ranking, Relevance and Classification for Product Reviews**: With millions of reviews for millions of unique products written by our users there come the challenges of spam detection (profanity, gibberish, distinguishing between reviews for a product vs. a particular offer vs. an individual seller), as well as finding relevant reviews and ranking them using machine learning models for a variety of different markets (languages).

- **Text Summarization**: All the details about an offer on sale are important to make purchase decisions. However, with most traffic shifting to mobile devices the real-estate is limited. Summarization algorithms [extraction based for now, we are researching abstraction based algorithms] help find the most crucial pieces of information in long descriptions and put them in a summarized fashion in front of customers. Again these are across different languages on very unique content (eBay vocabulary).

- **Evidence Signal Based Recommendations**: What provides a user with confidence and trust to make an immediate buying decision? We build machine learned models which aim to predict for every offer and user which signals to show from a predefined large set of signals to convince the user to transact on the offer. Some sample signals are “Experienced Seller”, “X offers already sold”, “x% money goes to charity” etc.

- **Query Understanding**: An engine based on behavioral data mining which in real-time analyzes queries flowing into eBay. It first performs annotation and entity extraction and based on the same makes a decision whether to land the user on a search results page (SERP) or on a curated browse landing page. The goal is to understand query intent to
the best extent possible and tie the unstructured text queries to known structured data in products.

Advertising
At eBay Advertising, you will get a chance to innovate and develop large scale machine-learning products that impact hundreds of millions of users. Sample problems we work on include:

- Connecting buyers to the right sellers and brands with the right messages. eBay has hundreds of millions of users who are looking to purchase on the platform. You can tap into the eBay marketplace to explore the complete purchase journal of the buyers (e.g., their searches, view items, purchases) and the competitive landscape of the sellers and items. You will get a chance to develop algorithms to provide users with the best choice and the most relevant messages by connecting the users with the right sellers and brands.
- Yield optimization for real-time bidding. The eBay marketplace has billions of requests per day and is one of the largest platforms for real-time bidding for advertising. Brands and advertisers want to tap into the traffic to connect with users with purchase intent. With real-time bidding, you will be able to explore the ad auction marketplace and investigate different optimization strategies in a dynamic, information asymmetric environment.
- Holistic user experience and marketplace health. Advertising can guide users to their best choice but at same time it can distract the users from their purchase journey. This is a unique problem to eBay where it has both the e-commerce marketplace and the ad marketplace co-existing and interacting. Here you will develop business metrics to measure the marketplace health and develop algorithms to optimize in real time the performance of both the e-commerce marketplace and the ad marketplace.

We look for talents with a background in predictive modeling, recommendation, deep learning, ad targeting, bid optimization, yield optimization, operations research and control theory.

Marketing
At eBay Marketing, we design and develop large-scale machine learning models on massive data sets that power eBay's Paid Internet Marketing channels, including Paid Search (Google and Bing), Paid Social (Facebook), Display Ads, and eBay partner network (ePN). If you go to search a product on Google and see eBay product ads, that's us. If you go on Facebook and see recommendations from eBay, that's us. If you go to ESPN, CNN and any third party websites and see eBay Ads, that's us. Working at eBay Marketing allows you to reach out to and make a huge impact on millions of online users and find them the best inventories we have at eBay. Here are some of the key projects we work on and we look for talents with a background in machine learning, bid optimization, recommendation, deep learning, and operations research.
- Optimize the bids of keywords (Text Ads) and eBay listings (Product Listing Ads) sent to Google and Bing so that we improve the ROI and brings more New buyers to eBay.
- Design bidding strategies to retarget eBay users via Facebook and display ads.
- Generate content recommendations for the Ads on Facebook and third party websites based on user's behavior on eBay.
- Item recommendation for small ePN publishers based on context aware recommender systems.
**Company Overview**

HubSpot helps millions of organizations grow better, and we’d love to grow better with you. Our business builds the software and systems that power the world’s small to medium-sized businesses. Our company culture builds connections, careers, and employee growth. How? By creating a workplace that values flexibility, autonomy, and transparency. If that sounds like something you’d like to be part of, we’d love to hear from you.

You can find out more about our company culture in the HubSpot Culture Code, which has more than 3M views, and learn about our commitment to creating a diverse and inclusive workplace, too. Thanks to the work of every HubSpotter globally who has helped build our remarkable culture, HubSpot has been named a top workplace by Glassdoor, Fortune, Entrepreneur, and more.

HubSpot was founded in 2006. We’re headquartered in Cambridge, Massachusetts, and we have offices in Dublin (Ireland), Sydney (Australia), New Hampshire, Singapore, Tokyo (Japan), Berlin (Germany), and Bogotá (Colombia).

**Why HubSpot?**

Growth, purpose, and people. For starters. What else though?

- **Big Impact** – There are big challenges yet to be solved at HubSpot. Because we care more about curiosity than experience, you’ll work on projects – with engineers and leadership alike – that directly impact our customers, business, and employees.

- **Complete Autonomy** – Transparency is at the heart of our culture. You’ll have access to all the resources and information you need to take ownership and make key decisions.

- **Leading with flexibility** – Feedback, research, and our own employees show that the number one way to do that is by being flexible. Giving HubSpotters the freedom and flexibility to create their own work-life balance builds trust in our company, but it’s also just the right thing to do.
What kind of assignments would I work on while I’m at HubSpot?

There are many big challenges waiting to be solved at HubSpot. We know you’ll offer much expertise and experience, so you’ll work with your assigned mentor to play to your strengths and also determine projects that directly impact our customers, business, and employees. Examples include:

- Creating brand new tools and features to add to our current Growth Stack that we offer to our customers (e.g. a custom Rich Text Blog Post Editor for Marketing Hub, Chat Bots for Service Hub)
- Optimizing our Growth Stack for multiple platforms (e.g. HubSpot for Android)

Where would I work as a 6-A Student at HubSpot?

While we have offices all around the world, our global headquarters in Cambridge, MA will be the home site for your 6-A assignment – just a short 15 minute walk from the MIT Cambridge campus.

What requirements should I be aware of before applying?

**Foreign Student Employment**
We welcome all students to apply. All applications will be considered regardless of type of visa or sponsorship required.

**Personal transportation needs and availability near HubSpot**
Transportation is readily available via the MBTA. Our Cambridge, MA office is conveniently steps away from Lechmere Station on the Green Line, and a 10-15 minute walk from Kendall Square on the Red Line. HubSpot also subsidizes the cost of the Blue Bikes service for all employees, including our students, and also provides pre-tax benefits towards public transportation.

How many 6-A student positions will you have available?

We will hire as many students as we see a mutual fit in interest and need between students and HubSpot. However, our goal is to hire up to six 6-A students.

Where can I go for more information?

Please visit us at hubspot.com/students to read more about our opportunities. For more around our Product & Engineering teams, you can visit product.hubspot.com.
Lawrence Livermore National Laboratory (LLNL), located in Northern California, is one of our nation’s top national security research and development centers. The country depends on us to anticipate and solve challenges facing our nation and the world. LLNL has been referred to as one of the nations “crown jewels” in addressing economic, energy and environmental security.

Electrical Engineering careers at Lawrence Livermore National Laboratory offer experience in many disciplines.

- Artificial Intelligence
- Signal and Image Processing
- Machine Learning
- Computer Vision
- Electro-magnetics
- RF/Radar/Communications
- Computational Electromagnetics
- Pulse Power
- Electrical Hardware
- Control Systems
- Lasers
- Optics
- Optic-Electronics
- Sensors
- Autonomous Machines
- Electric Power/Grid
- Cyber security

Engineering has a history of innovative technology breakthroughs that have contributed to the safety and security of our country. Each summer we host approximately 600 students from universities across the country. Summer interns are assigned a mentor and a project in their field of interest. Students are encouraged to attend tours, talks and socials to learn about the breath of opportunities at Lawrence Livermore National Laboratory.

World’s Largest Laser Creates Fusion Reactions  
Interns participating in annual game of Trivial Pursuits
Room Rental and Roommate Opportunities: It's common for LLNL employees, living in the immediate area, to open their home to students during the summer. Rents can range from $700 to $900 per month. LLNL employees have the opportunity to make rooms and other rental properties available to incoming summer students. You can access these housing opportunities through our Scholar Candidate System. [http://scholars-llnl.ttcportals.com/pages/housing](http://scholars-llnl.ttcportals.com/pages/housing)

Employment Requirements: U. S. Citizenship is required for 6-A Students. All candidates must successfully complete a drug screen.

Travel/Relocation: LLNL provides reimbursement of travel expenses. Your employment offer will include travel authorization expense claim forms, travel allowance information and reimbursement instructions.

Transportation: Most student ride bikes to the lab although there is public transportation available to students that choose to live farther away.

6-A Opening: Currently 2 openings

Past Projects by EE Interns:

- Testing Magnetic Actuation of Polyimide-Nickel Probes Toward a 3D Brain-on-a-Chip Device
- Secure Data Transmission via Free Space Optic Communication
- Linear Variable Differential Transformer (LVDST) Signal Conditioning for National Ignition Facility
- Optical Throughput Calibrations in the Vacuum UV
• Improving Alignment Time of the National Ignition Facility Final Optics Assembly by Using Prior Alignments for a Better Estimate of the Initial Position
• Electrical Properties of Stainless Steel and Copper Powder in a Silicone Matrix
• Ground Penetrating Radar Array Vehicle Mount

6-A Students send applications to Beth McCormick, Engineering Recruiting Manager, mccormick11@lbnl.gov
About Micron

Micron Technology is a world leader in innovative memory solutions that transform how the world uses information to enrich life. Through our global brands — Micron, Crucial® and Ballistix® — and a team of over 34,000, we offer the industry’s broadest portfolio, and we are the only company manufacturing today’s major memory and storage technologies: DRAM, NAND, NOR and 3D XPoint™ memory.

Honoring the Past, Celebrating our Future

Micron Technology began in 1978 as a four-person semiconductor design company in the basement of a Boise, Idaho, dental office. Located between a high desert plain and the Rocky Mountain foothills, Boise was an unlikely spot for a high-tech start-up, but we broke ground on our first fabrication plant by 1980 and introduced the world’s smallest 256K DRAM just a few years later. In 1994, we earned a spot on the Fortune 500 and then steadily grew into an industry leader, playing an instrumental role in some of the world’s most significant technological advancements. Today, backed by 40 years of technology leadership and a patent portfolio of 40,000, Micron continues to collaborate with the world’s most trusted brands, and our solutions are enabling disruptive trends such as artificial intelligence, machine learning and autonomous vehicles.

A Team of Experts

Micron depends on a talented, determined and highly educated workforce located in 17 different countries to design, develop and manufacture high-quality, cutting-edge memory solutions. We pursue the highest-quality talent in our hiring and maintain a work environment that enables our team members to thrive throughout their Micron careers. Our commitment to team members is reflected in our core values and illustrated by our commitment to provide an engaging work environment that is ethical, diverse and inclusive.

Professional Development and Recognition

To attract and retain people with exceptional capabilities, we invest in the ongoing learning and development of our team members, fostering a work environment that inspires creativity, leadership and collaboration.

We provide Micron team members with direct access to technical and business skills training through our internal learning management system and through other systems for cultural awareness, personal and professional skills building, and industry-relevant research. Our leadership development programs are designed to go beyond the classroom to challenge our current and future leaders to solve critical business cases using newly developed skills and behaviors. These programs have been recognized with awards from Brandon Hall in 2016 and HR.com in 2017.
For our technical talent, we have an active Technical Leadership Program that offers ongoing educational activities and the opportunity to add value through collaboration. In addition, the company’s robust Inventor Appreciation Program recognizes the outstanding contributions made by Micron’s inventor and engineering team members who are developing state-of-the-art technology innovations and building up our world-class patent portfolio.

Micron resources are also available to help our team members prepare their educational plans and select programs that best support their industry interests and career development. All our sites offer a continuing education program, providing tuition for eligible team members pursuing higher education degrees, and an Education Assistance Program for those seeking additional industry-related courses and certifications. By providing participating team members with ownership of the learning process, we empower them to choose their development priority and find resources to support their development and enable them to intentionally engage in new experiences in a meaningful way.

**Diversity and Inclusion**

As a multinational company, we know that real innovation comes from our team members’ distinct experiences, perspectives and backgrounds. We work diligently to attract the broadest possible talent pool in the regions where we operate because we hire the people who are inventing tomorrow. These individuals come with untold ambition and unbridled curiosity that is rich, diverse and key to the organization’s success.

We do more than simply recruit a wide array of diverse candidates across our global team. Micron cultivates a diverse and inclusive culture in which our team members feel valued for who they are, how they think and how they solve problems. It’s a reciprocal environment in which talent can continuously grow and thrive.

We strongly believe that the unique diversity of our worldwide team and the inclusivity of our culture is a strategic advantage. As a result, we support several inclusion-related programs including:

- **Micron Connection**
  A platform for team members to build both internal and external community connections.

- **Employee Resource Groups (ERG)**
  Voluntary, employee-led groups that foster a diverse, inclusive workplace aligned with our mission, values, business practices and objectives.

- **Diversity & Inclusion Council**
  A diverse group of senior leaders who set strategy, drive tactics and act as company-wide diversity and inclusion ambassadors.

In addition to the above programs, our CEO, Sanjay Mehrotra, joined the CEO Action for Diversity & Inclusion in June 2017. He, along with over 400 other CEOs, pledged to actively cultivate a workplace in which diverse perspectives, backgrounds and experiences are welcomed and respected; where team members feel encouraged to keep exploring new ways of approaching diversity and inclusion; and where what works (and what doesn’t) can be shared across organizations via a unified hub (CEOAction.com) in an effort to advance diversity and inclusion in the workplace.

**Doing Business the Right Way**
For Micron, doing business better means doing business right. That’s why Micron is dedicated to the health and safety of our workforce, our supply chain responsibilities and our high-quality product standards. The company’s commitment to sustainable practices embodies our corporate values with continuous innovation and high integrity; a proactive approach to environmental stewardship; and strong support for the communities where our team members live and work through our philanthropy and people.

Created in 1999, The Micron Foundation cultivates the future generation of innovators by supporting a range of programs around the world. In 2017, the Micron Foundation awarded more than 550 grants worldwide and donated more than $10 million to education and community-related causes.

In addition to the Foundation’s efforts, Micron encourages and facilitates the efforts of our team members who are interested in volunteering to support various community events or organizations. We keep team members informed about opportunities, provide contact information and organize groups so they can volunteer as part of a Micron team.

A Future of Possibilities
For 40 years Micron has had a singular obsession with the role of memory in a world of infinite information. We’re not content to deliver memory that just fills a need — we create technology specifically designed to enable our customers to realize their fullest potential.

Today, we are still creating and recreating, looking for ways that our technology can continue to enrich the world by providing faster and more efficient access to information. You can be a part of this journey. Let’s join forces and build a future of possibilities together.

Starting Your Career at Micron
From day one, our interns and new college graduates are immersed in Micron culture. We assign meaningful and challenging projects to our newest team members so they can begin contributing immediately. Since we recruit the very best from a wide range of national universities, our expectations are high – only the extraordinary need apply!

In 2018, all 320 of our U.S.-based interns spent their summer working side-by-side with full-time team members on projects that affected real change within Micron and the memory industry. For a closer look at our 2018 intern pool, see the statistics below.

<table>
<thead>
<tr>
<th>Major</th>
<th>% of Total</th>
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<tbody>
<tr>
<td>Engineering</td>
<td>80</td>
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<td>Field</td>
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<tr>
<td>IT/Computer Science</td>
<td>10</td>
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<tr>
<td>Business/Supply Chain/Operations</td>
<td>4</td>
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<tr>
<td>Data Science/Analytics</td>
<td>3</td>
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<tr>
<td>Human Resources, Legal, Marketing</td>
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COMPANY DESCRIPTION:

NASA Langley Research Center is located in Hampton, Virginia. The Center supports NASA’s missions in Aeronautics, Space, Science and Space Technology. There is more information on the Center here: https://www.nasa.gov/langley/overview.

LOCATION OF WORK:

Hampton, Virginia

EXAMPLES OF TYPICAL 6-A THESIS TOPICS:

1. Introduction of learning algorithms into aviation safety critical environments. This will involve decision making in environments where the information available may be incomplete. As part of the work, there may be opportunities to flight test on commercial aviation relevant platforms.

2. Investigation of machine learning to enable in-situ quality control of 3D printed components.

CITIZEN REQUIREMENT:

US Citizenship required.

HOUSING AND RELOCATION INFORMATION:

The internship program coordinator assists with finding affordable housing for the duration of the internship. Personal transportation is recommended.

CONTACT:

Emilie J. Siochi
emilie.j.siochi@nasa.gov
From Conversational AI to Blockchain

Founded in 2015 by a team of MIT grads, Posh focuses on cutting-edge technologies like machine learning, natural language processing, and blockchain; working with enterprise customers in industries including financial services, healthcare, utilities, and beyond. We’re based in the heart of downtown, with an office in Boston’s financial district. Previous MEng 6-A thesis work has centered on AI/NLP and systems. Interested? Reach out to team@posh.tech
COMPANY DESCRIPTION:
Sky is a British telecommunications company and Europe’s largest pay-TV broadcaster. With a headquarter located in London UK, Sky has operations in the UK, Ireland, Germany, Austria, Italy and Spain, serving 22 million customers from 11 million connected homes with market-leading Sky TV and entertainment experiences. Sky is also offering services including flexible NOW TV contract-free streaming services, broadband, mobile phone network and line rental services. 10 million homes have registered for Sky Go, Sky’s own mobile TV service with over 3 billion annual views to on-demand contents. Sky is at the forefront of innovation, leading the way in broadcasting engineering, advertising technology, content discovery technology, voice search, image and video processing, data analytics and many other technical areas. “Believe in better” is Sky’s culture and we welcome talents to join our journey of innovation.

LOCATION OF WORK:
Sky headquarter campus, West London, UK

EXAMPLES OF TYPICAL 6-A ASSIGNMENTS AND 6-A THESIS TOPICS:
- Learning mood perception from movie posters and video streams.
- Hierarchical semantic scene interpretation by linking spatial-temporal visual events in videos.

DRUG AND ALCOHOL POLICY:
All internship students should follow all Sky policies.

CONDITIONS OF EMPLOYMENT OF FOREIGN STUDENTS:
Sky internship opportunity is open to students from all countries. Students with UK or EU passports have no restriction on working in UK. Students with passports from countries outside EU are required to apply for UK Visa. More information will be available soon.

HOUSING AND RELOCATION INFORMATION:
Internship students are expected to find their own accommodations. Sky may provide advices, all following Sky’s company policies.
PERSONAL TRANSPORTATION NEEDS AND AVAILABILITY IN AN ASSIGNMENT AREA:
Sky campus is close to London Heathrow Airport. Public transportation services, including trains, underground and buses, are all available around Sky’s campus. Moreover, Sky provides free shuttle bus services linking Sky’s main campus to various underground stations.

DETAILS OF FINANCIAL ASSISTANCE GIVEN DURING GRADUATE WORK TERM (if any):
Sky will pay salary to internship students during graduate work term.

CONTACT:
Jian Li
Principal Data Scientist
Machine learning research and project management.
Jian.Li@sky.uk

Joseph Boadi
Data Scientist
Machine learning research for content discovery
joseph.boadi2@sky.uk

Hubert Behaghel
Head of Technology
Oversees engineering solution and technology innovation
Hubert.Behaghel@sky.uk
COMPANY DESCRIPTION:
Sumo Logic is a cloud-native, machine data analytics service, delivering real-time, continuous intelligence from structured, semi-structured and unstructured data across the entire application lifecycle and stack. Our mission is to democratize analytics, making it accessible, simple and powerful for businesses of all sizes to build, run and secure their organizations. With Sumo Logic, customers can harness the power of machine data to gain operational business and customer insights that lead to competitive advantage and differentiated customer experience. We have 1500+ enterprise customers with $235.5M in funding from the world's leading investors (Accel, Greylock, Sequoia, Sutter Hill, DFJ Growth, and Sapphire Ventures).

LOCATION OF WORK:
Sumo Logic HQ is in Redwood City, California

EXAMPLES OF TYPICAL 6-A ASSIGNMENTS AND 6-A THESIS TOPICS:
Research problems are driven by the product development challenges of our large-scale SaaS platform for real time data analysis and troubleshooting, and could span a variety of topics in either frontend (UI) or backend engineering. The most recent thesis topic was about developing novel interfaces for the exploration, discovery, and visualization of richly structured datasets - it included UI design mockups, actual implementation, algorithmic innovation and experimentation, as well as UX user testing research.

SECURITY CLEARANCE REQUIREMENTS (if any):
None

DRUG AND ALCOHOL POLICY:
Sumo Logic considers drug and alcohol abuse a serious matter which will not be tolerated. The Company absolutely prohibits employees from using, selling, possessing, or being under the influence of illegal drugs, alcohol, or a controlled substance or prescription drug not medically authorized while at their job, on Company property, or while on work time.

Therefore, it is the Company's policy that:

1. Employees shall not report to work under the influence of alcohol, illegal drugs, or any controlled substance or prescription drug not medically authorized.

2. Employees shall not possess or use alcohol, illegal drugs, or any controlled substance or prescription drug not medically authorized while on company property or on company business. Notwithstanding the forgoing, employees may responsibly drink alcohol at company-sponsored events.

CONDITIONS OF EMPLOYMENT OF FOREIGN STUDENTS:
Yes, we will consider students who will ultimately require sponsorship.
HOUSING AND RELOCATION INFORMATION
(any company assistance, e.g. hotel, rental car, any special arrangements for local housing):
Sumo will provide round trip airfare from anywhere in the USA and Canada, as well as a $2500 (net) payout towards relocation for the duration of the Internship.

PERSONAL TRANSPORTATION NEEDS AND AVAILABILITY IN AN ASSIGNMENT AREA:
We are located within .75 miles of a train station that connects, which runs between San Francisco to the North and San Jose to the South.

DETAILS OF FINANCIAL ASSISTANCE GIVEN DURING GRADUATE WORK TERM (if any):
Sumo Logic will pay all Masters level students an hourly rate of $50 per hour

CONTACT:
David Andrzejewski
Senior Manager, Engineering
david@sumologic.com
Xylem has an exciting opportunity for an Embedded Software Engineer (Linux/IoT) internship located at EmNet in South Bend, IN (two hours from Chicago, IL). This role will support Treatment products and Advanced Infrastructure Analytics. This is a six month, paid opportunity open to electrical engineering and computer science graduate students.

This position will integrate across multiple business units within Xylem, along with domestic and international travel opportunities.

With real time intelligence and optimization, EmNet offers an open, integrated technology platform for the smart water utility of the future. Our technology enables comprehensive understanding, control, and dynamic optimization of water infrastructure, reductions in water and wastewater overflow and improving system performance. [Learn more about EmNet here.](#)

**Overview**

In cities across the world, storm events cause overflow of sewage due to the inability to manage increased flow. Artificial intelligence utilized in collection networks can optimize transport of wastewater.

At the wastewater plant, collected sewage is treated before discharge into the environment. Leveraging data intelligence from the collections network and wastewater plant is required to prepare the plant for peak flows during storm events, and microorganisms used to treat sewage have to be protected from washing out during a storm event. Data intelligence and development of process algorithms are required to activate additional capacity ahead of a storm event.

**Description**

Working with process engineers, data scientists and embedded software developers, create a gateway platform to leverage data from the collections network and the wastewater plant to protect the environment from overflows of untreated wastewater. The development and programming of controls algorithms to optimize the biological process at treatment...
plants is required to minimize energy consumption while preventing impact from storm events.

**Responsibilities**

- Develop software on embedded Linux systems including using C/C++ under Linux, and sometimes higher level frameworks like OSGI (Java) or Node-RED (JS)
- Integrate data intelligence from across the water cycle
- Implement measurement and process control algorithm
- Handle connectivity to external measurement systems, other field level devices, PLCs or SCADA systems; and connectivity to enterprise IT/OT systems or external cloud solutions

**Life at Xylem**

More than 12,000 men and women have joined our company for the opportunity to build a rewarding career while making a real difference in the world. At Xylem, we strive to create a workplace that’s energizing and where our people can work alongside the best and brightest of a global industry leader.

Life at Xylem is about discovering breakthrough innovations in water applications that anticipate and respond to the evolving needs of our customers. It’s about living our vision and values; acting responsibly and treating each other with integrity and respect; and fulfilling our philanthropic goals through exemplary corporate citizenship.

Our success is grounded in a proud heritage based on our history of more than 100 years of water technology leadership. Our strong product brands are leaders in their categories and the essential building blocks of our ongoing success. As a global company, we sell our market-leading products in more than 150 countries around the world. All of these vital components help us come together as a company to share a unified goal of finding new and better ways to solve global water challenges.

Xylem was recently named to FORTUNE “Change the World” list, recognized for making significant social impact through our core strategy. Xylem has been recognized for creating tangible social value through its innovative solutions that are helping to solve water challenges across the world. Also noted by Forbes, JUST Capital, Barron’s for leadership in sustainability, as well as leading employee volunteerism through Watermark to provide and protect safe water resources for communities in need around the world and educate people about water issues.

[Learn more about Xylem here.](#)
2019 MIT 6-A Graduate Internship Program
Nomination: Robotics Internship at Xylem Inc.

Pure Technologies is a world leader in the development and application of innovative technologies for critical infrastructure. In January 2018, Pure was acquired by Xylem, a leading global water technology company committed to developing innovative technology solutions to the world’s water challenges.

Pure Technologies expertise and patented technology-driven solutions are used around the world to help utility operators reduce the impact of deterioration while maximizing capital budgets for rehabilitation and replacement programs.

We’d be excited if you’d like to learn more about our business here.

We are honored to request consideration for an MIT 6-A Graduate intern to work and learn within our Robotics division. This position would be ideal for an EE student. Additionally, we believe it is perfect for an enthusiastic person who is passionate about creating practical applications that will make a difference for a global organization with a social mission.

The position will be located in our Toronto, Canada office which is a modern, combined R&D, mechanical design, analysis and business development center. This configuration, where the best technological and business minds collaborate in a modern and expertly designed space offers an almost unique opportunity to be immersed in different areas of our organization.

The intern will work closely with Pure’s R&D team (mechanical, electronics, control and software engineers) in Toronto to develop active control capabilities in a free-swimming inspection tool by implementing sensors in the tool, providing real time feedback based on pipeline feature recognition and then actively adjusting tool movement to pass/avoid features inside the pipeline, similar to self-driving car approach.

The intern will be surrounded by industry leading mentors and colleagues and will have the opportunity to participate in much wider collaboration events to further increase their knowledge and provide an impactful period within Xylem. Our Robotics division is experiencing rapid growth. Already the pre-eminent player in the market in North America, we are expanding rapidly into emerging markets and attempting to solve the most difficult problems of the world’s water cycle.
Fostering an atmosphere of creativity and innovation.

Finding innovative ways to assess difficult-to-inspect infrastructure is a growing challenge. The worldwide need for effective solutions has pushed our research and development efforts to continuously develop new methods to meet our clients very specific challenges. Our thought-leaders work closely with our clients, innovating new techniques and technology as needed to assess and manage critical infrastructure.

Whilst in Toronto the Intern will be mentored by Xiangjie Kong on a day to day basis. Xiangjie is world renowned technology thought leader and technology expert who leads our strategic technology initiatives. He/She will also be heavily mentored by James Milward who leads our robotics division and was formerly the founder and CEO of his own world leading Robotics inspection company. This dual background of technology and business acumen is an ideal mentoring program.

Pure Technologies firmly believes that a master’s thesis of sufficient rigour will be achievable from this internship and the combination of technical experience and an in-house L&D support network provides exactly the opportunity a highly capable and enthusiastic MIT Graduate would want.

In sum, this Internship opportunity would significantly enhance her/his professional and personal development, provide an excellent thesis opportunity and be a valuable mechanism to connect her/him to our world leading technologies and business methodologies.

Mark L Brown MSc MBA PMP
mark.brown@puretechltd.com
Learning & Development Manager
Xylem
2019 MIT 6-A Graduate Internship Program

Nomination: Machine Learning Internship at Xylem Inc.

*Pure Technologies is a world leader in the development and application of innovative technologies for critical infrastructure. In January 2018, Pure was acquired by Xylem, a leading global water technology company committed to developing innovative technology solutions to the world’s water challenges.*

*Pure Technologies expertise and patented technology-driven solutions are used around the world to help utility operators reduce the impact of deterioration while maximizing capital budgets for rehabilitation and replacement programs.*

We’d be excited if you’d like to learn more about our [business here](#).

We are honored to request consideration for an MIT 6-A Graduate intern to work and learn within our Software division. This position would be ideal for an EE&CS student or a combined Computational student. Additionally, we believe it is perfect for an enthusiastic person who is passionate about creating practical applications that will make a difference for a global organization with a social mission.

The position will be located in our Toronto, Canada office which is a state of the art combined R&D, mechanical design, analysis and business development center. This configuration, where the best technological and business minds collaborate in a modern and expertly designed space offers an almost unique opportunity to be immersed in different areas of our organization.

The intern will work closely with Pure’s R&D team (physicists, signal processing, analysis algorithm and software developers) and analysis team globally to utilize advanced signal processing, pattern recognition and machine learning techniques to improve the efficiency, accuracy and consistency of analysis of electromagnetic and ultrasonic inspection data.

The intern will be surrounded by industry leading mentors and colleagues and will have the opportunity to participate in much wider collaboration events to further increase their knowledge and provide an impactful period within Xylem. Our division is experiencing rapid growth. Already the pre-eminent player in the market in North America, we are expanding rapidly into emerging markets and attempting to solve the most difficult problems of the world’s water cycle.
Fostering an atmosphere of creativity and innovation.

Finding innovative ways to assess difficult-to-inspect infrastructure is a growing challenge. The worldwide need for effective solutions has pushed our research and development efforts to continuously develop new methods to meet our clients very specific challenges. Our thought-leaders work closely with our clients, innovating new techniques and technology as needed to assess and manage critical infrastructure.

Whilst in Toronto the Intern will be mentored by Xiangjie Kong on a day to day basis. Xiangjie is a world renowned technology thought leader and innovative expert who leads our strategic technology initiatives division. He/She will also be heavily mentored by Tym Armstrong who leads our software division. Tym has built and mentored a global team responsible for transforming the infrastructure data industry by leveraging the nascent capabilities of Machine Learning & AI. This is truly ground-breaking R&D.

Pure Technologies firmly believes that a master’s thesis of sufficient rigour will be achievable from this internship and the combination of technical experience and an in-house L&D support network provides exactly the opportunity a highly capable and enthusiastic MIT Graduate would want.

In sum, this Internship opportunity would significantly enhance her/his professional and personal development, provide an excellent thesis opportunity and be a valuable mechanism to connect her/him to our world leading technologies and business methodologies.

Mark L Brown MSc MBA PMP
mark.brown@puretechltd.com
Learning & Development Manager
Xylem
Do you want to work for a company recognized as #7 in FORTUNE’s Change the World list of top 50 companies in 2018?

By 2025, roughly 25% of the world’s population, or 1.8 billion people, are expected to be living in areas with absolute water scarcity.

Xylem (XYL), a $4.7 billion firm, bolstered recently by a spree of “smart infrastructure” acquisitions, is working to tighten the pipes of the world’s water supply, installing sensor-driven, software-enabled technologies that can reduce losses (which typically siphon off an estimated one in six gallons for municipal systems in the U.S. and up to 60% of supply in emerging markets). The Company’s products and services move, treat, analyze, monitor and return water to the environment in public utility, industrial, residential and commercial building services settings. Xylem also provides a leading portfolio of smart metering, network technologies and advanced infrastructure analytics solutions for water, electric and gas utilities. The Company’s more than 16,500 employees bring broad applications expertise with a strong focus on identifying comprehensive, sustainable solutions.

As a MIT 6-A intern you will be working in the domain of automated machine learning (AutoML) at the confluence of Machine Learning, Signal Processing, and Information Theory to enable edge computing for smart infrastructure applications. AutoML is the process of automating the end-to-end process of applying machine learning to real-world problems. ML practitioners typically spend a lot of time with data pre-processing, feature engineering, feature extraction, and feature selection methods. AutoML seeks to automate the data science process and choose the best features and hyper-parameters for a machine learning application.

To enable ML applications in edge environments we need to identify optimal signal pre-processing and encoding algorithms. Topics from signal processing and information theory like wavelet basis selection, rate distortion theory, and channel encoding can be leveraged in complex machine learning pipelines that include offline and online scenarios. This internship will expose you to real world applications of signal processing and information theory in machine learning pipelines designed to address problems in water infrastructure.

You will be joining a world class data science community at Xylem staffed with collaborative talent from top universities and well supported with domain experts, data science devops, an established cloud computing environment, and PB of data. At MIT, you will be mentored by Kalyan Veeramachaneni Principal Research Scientist in the Laboratory for Information and Decision Systems (LIDS,MIT). He leads a group called Data-to-AI. The group is interested in Big data science, Machine learning and developing AI applications to address societal needs.