

# Department of Electrical Engineering and Computer Science

## Overview

The Department of Electrical Engineering and Computer Science (EECS) is MIT's largest department, with 140 faculty conducting research in four affiliated labs: the Computer Science and Artificial Intelligence Laboratory (CSAIL), the Laboratory for Information and Decision Systems (LIDS), the Microsystems Technology Laboratories (MTL), and the Research Laboratory of Electronics (RLE).

EECS is home to a growing portion of MIT's student body. For the 2022-2023 academic year, 1,543 undergraduates (across 6-1, 6-2, 6-3, 6-4, 6-7, 6-9, 6-14, and 11-6), 263 master of engineering (MEng) students, and 812 graduate doctoral students were enrolled in EECS, according to the MIT Registrar's "Y Report" as of October 2022.

Asu Ozdaglar, Distinguished Professor of Engineering and the Deputy Dean of Academics for the College of Computing, continues to serve as head of EECS. Joel Voldman is faculty head for EE. Arvind is faculty head for CS. Antonio Torralba is faculty head for AI+D.

## ADDITIONAL DEPARTMENT LEADERSHIP

Education Officers:

Dennis M. Freeman – EECS

Elfar Adalsteinsson – EE

Robert Miller – CS

Yury Poliyansky – AI+D

Undergraduate Officer:

Katrina LaCurts

Equity Officer:

Fredo Durand

Graduate Officer and Equity Officer:

Leslie A. Kolodziejcki

Undergraduate Laboratory Officer:

Ruonan Han

Industry Officer:

Mohammad Alizadeh

Director of Administration and Finance

Kelly White

Senior Financial Administrator

Yong Rong (Irene) Huang



*EECS held a faculty and lecturer retreat on October 11th, 2022, at Endicott House. From left to right: Arvind, Asu Ozdaglar, Antonio Torralba, and Joel Voldman. Photo credit: Kelly White*

## EECS Undergraduate Program

### Overall Enrollment

In the 2022-2023 academic year, 1,543 undergraduate students were enrolled in the department as of October 7, 2022, according to the Registrar's Office "Y" Report. The department also enrolled 263 MEng students.\*

Undergraduate enrollment was split across the department's eight majors:

- 40 students (3 percent (\*\*)) in 6-1, Electrical Science and Engineering
- 333 students (22 percent) in 6-2, Electrical Engineering and Computer Science
- 774 students (50 percent) in 6-3, Computer Science and Engineering
- 37 students (2 percent) in 6-4, Artificial Intelligence and Decision Making
- 64 students (4 percent) in 6-7, Computer Science and Molecular Biology
- 171 students (11 percent) in 6-9, Computation and Cognition
- 102 students (7 percent) in 6-14, Computer Science, Economics and Data Science
- 22 students (1 percent) in 11-6, Urban Science and Planning with Computer Science

\*This figure includes participants in the 6-A MEng Thesis Program.

\*\*Percentages have been rounded.

The joint majors — 6-7, offered in conjunction with the Department of Biology; 6-9, offered in conjunction with the Department of Brain and Cognitive Sciences; 6-14, offered in conjunction with the Department of Economics; and 11-6, offered in conjunction with the Department of Urban Studies and Planning — remain robust. Almost 25% of our undergraduates belong to one of the joint majors.

The department also offers a minor in computer science. During the 2022-2023 academic year, 42 students completed the CS minor. Another 34 have declared the minor but not yet completed the requirements. These students are majors in 12 different departments. Roughly 80 percent are seniors and 20 percent are juniors.



*Proud new alumni (left to right) Andrea L. Garcia BS '23, Shreyaa Raghavan BS '23, Emily Rosmery Sologuren BS '23, and Alex Hong Quach BS '23 show off their newly minted diplomas. Photo credit: Randall Garnick*

### **Class Enrollment**

EECS subject enrollments have increased steadily for more than a decade, now accounting for more than half of total subject enrollments in the School of Engineering and more than 1/6 of enrollments at MIT. (EECS has renumbered its subjects; old subject numbers are shown in brackets following the new course number.) The department continues to draw students from across the Institute, with two subjects that enroll more than 1000 students per year (6.100A [6.0001] Introduction to Programming in Python and 6.1010[6.009] Fundamentals of Programming), and several others that enroll more than 700 per year (6.1200J[6.042] Mathematics for Computer Science, 6.1210[6.006] Introduction to Algorithms, and 6.3900[6.036] Introduction to Machine Learning).

### **New EECS subjects**

- 6.120A Discrete Mathematics and Proof for Computer Science. This 6-unit sophomore-level course offers a subset of elementary discrete mathematics (6.1200[6.042]) sufficient for introductory algorithms, including logical notation, sets, elementary graph theory, state machines and invariants, induction and proofs by contradiction, recurrences, asymptotic notation, elementary analysis of algorithms, elementary number theory and cryptography, permutations and combinations. Introduced as part of the revised 6-2 EE+CS curriculum to enable EE majors to take 6.1210[6.006] Introduction to Algorithms with only a 6-unit prerequisite, the course is also being considered as a requirement for other blended majors, such as 6-7.
- 6.1900 Introduction to Low-Level Programming in C and Assembly. Sophomore-level introduction to C and assembly language for students coming from a Python background, including memory, pointers, stack and heap, registers, how different data structures are stored in memory, and how high-level languages

are translated to machine-level instructions. Introduced as a required course for the revised 6-2 and 6-3 curricula, and as a new prerequisite for 6.1910[6.004] Computation Structures.

- 6.S965 TinyML and Efficient Deep Learning Computing. Taught by Professor Song Han, this graduate course introduces efficient deep learning computing techniques that enable powerful deep learning applications on resource-constrained devices. Topics include model compression, pruning, quantization, neural architecture search, distributed training, data/model parallelism, gradient compression, on-device fine-tuning. It also introduces application-specific acceleration techniques for video recognition, point cloud, and generative AI (diffusion model, LLM).
- 6.S980 Machine Learning for Inverse Graphics. From a single 2D picture, humans reconstruct a mental representation of the underlying 3D scene including shape, appearance, physical properties and purpose. Emerging neural scene representations aim to build models that replicate this behavior: Trained in a self-supervised manner, the goal is to reconstruct rich representations of 3D scenes that can then be used in downstream tasks such as computer vision, robotics, and graphics. This course covers techniques at the intersection of computer vision, computer graphics, and deep learning.
- 6.S986 Large Language Models and Beyond. The field of natural language processing (NLP) has recently made remarkable progress through large language models (LLMs) trained at scale on broad data. This large-attendance seminar explores various issues and questions surrounding the state-of-the-art systems. The course discusses applications in NLP and other domains, emergent capabilities, efficient training and deployment. Students in the course touch upon philosophical and ethical implications
- 6.9000 Engineering for Impact A new System Design Lab course in the revised EE curriculum was offered by Prof. Joel Voldman and Senior Lecturer Joe Steinmeyer. In this class, teams of students deploy engineering skills to solve problems with an emphasis on the societal, ethical, and legal implications of their design choices. The initial run of this class in spring 2023 focused on problems that arise for users of public transportation in extreme heat, which draws on collaboration with Miami-Dade County Department of Transportation and Public Works.
- 6.S046/6.S976 Silicon Photonics was developed and offered by Prof. Jelena Notaros. The material spans silicon-photonics-based devices, circuits, systems, platforms, and applications that span such wide disciplines as computing, communications, and biophotonics. Jelena sourced equipment and infrastructure for hands-on labs, and the pilot run of the class was filled to capacity with both undergraduates and graduate students.
- 6.2410 Quantum Engineering Platforms by Profs. Dirk Englund and Marc Baldo, was a new offering in the spring of 2023 within the Quantum Systems Engineering track in the revised EE curriculum. The class provides practical knowledge and quantum engineering experience via hands-on laboratory work

with physical platforms for quantum computation, communication, and sensing. Labs span both hardware and cloud computing to run algorithms on state-of-the-art commercial systems.

- 6.2200 Electric Energy Systems by Profs. Rajeev Ram, Marija Ilic, Jeff Lang, and David Perreault is centered on analysis and design of modern energy conversion and delivery systems. Students apply the material covered to consider critical challenges associated with global energy systems, with particular examples related to the electrification of transport and decarbonization of the grid.
- 6.S966 Symmetry and its Application to Machine Learning and Scientific Computing by Prof. Tess Smidt is a new class on the use of group representation theory to construct symmetry-preserving algorithms for machine learning. Students implement core mathematical concepts in code to build algorithms that can operate on graphs, geometry, scientific data, and other structured data to preserve the symmetries of these domains.
- 6.S045 Computational Imaging: Physics and Algorithms by Profs. George Barbastathis, Rajeev Ram, and Sixian You. This new class introduces a unified formulation of computational imaging with two exemplary imaging systems, describing their physical and algorithmic components. Imaging involves encoding onto a form of radiation the information about a physical object, transferring the radiation through the imaging system, converting it to a digital signal, and finally computationally decoding the object information and presenting it to the user. The class includes student projects on an imaging system of their choice.

### Curriculum revisions

The New 6.4 Artificial Intelligence and Decision-making major started in fall 2022. The new major has involved, in addition to substantial planning carried out by a committee of 17 faculty and lecturers, a number of revisions in several classes and new courses. We have developed a set of new courses, such as; Deep Learning (6.S898), Machine Learning for Inverse Graphics (6.S980), Clinical Data Learning, Visualization, and Deployments (6.S982), Computational Foundations for Ethical ML in Life Sciences and Health Care (6.S040), Learning of Time Series with Interventions (6.S89), Natural Language and Human Language Computation (6.S051), Symmetry and its Application to Machine Learning and Scientific Computing (6.S966), and Advanced Sensorimotor Learning (6.S897). The classes 6.806 (advances in natural language processing) and 6.819 (advances in computer vision) are now CI-M classes. The new 6.4 major has also created a lot of interest among other departments and we are exploring how to create tracks in AI+D that can benefit other majors.

Redesign of the EE Curriculum. Under the leadership of EE Faculty Head Joel Voldman, a major redesign of the EE curriculum has been approved and first offerings of many new or revised subjects occurred in the past year. In total, over 20 classes are being introduced or revised. New classes include a two-course sequence in quantum engineering (including one of the first quantum engineering laboratory

subjects), a course on energy systems (from machines to the grid), and a class on developing hardware/software systems for society. The curriculum now includes a new nanofabrication class, and two classes that use state-of-the-art chip design tools, including one class where undergraduates get to have their designs fabricated using commercial foundries.



*Students in 6.900, “Engineering For Impact”, assemble a sensor designed to measure temperature conditions at a Miami bus stop. Photo credit: Gretchen Ertl*

### **Undergraduate Office Updates**

In partnership with The Undergraduate Student Advisory Group in EECS (USAGE), the Undergraduate Office continued to focus on community-building. Based on recommendations from USAGE and other students, the office developed a wider array of community-building events, including Food Truck Fridays (serving 1226 attendees in Fall ‘23), biweekly MEng social hours, student lunches with faculty members, undergraduate office “pop-up” events, and an end-of-the-year celebration.



*Undergraduates enjoyed regular lunches with faculty members as part of EECS’s community-building efforts. Here, Prof. Marzyeh Ghassemi hosts a lunch with ten students.*

The office streamlined its operations by automating the MEng graduate-units audit and moving to an email ticketing system. The former has transformed a two-week process into something that can now be completed in one day, and the latter has improved the efficiency of the office's email responses and ability to track student issues.

### **SuperUROP at MIT: New Opportunities for Student Researchers**

The Advanced Undergraduate Research Opportunities Program ([SuperUROP](#)), celebrated its tenth anniversary in the fall of 2022. Since its genesis in 2012, the program has ushered a total of 1,149 undergraduates through the complete research cycle, under the guidance of MIT faculty.

In December of 2022, students presented their research in a showcase (the first in-person since the pandemic.) AY 2022-2023 concluded with 84 students receiving their Certificates in Advanced Undergraduate Research.



*The annual fall showcase gives SuperUROP students a chance to discuss their research with faculty, sponsors, and corporate contacts. Photo credit: Randall Garnick*

### **Departmental Teaching Laboratories**

EECS Faculty Member Karl Berggren served this past year as the EECS Undergraduate Laboratory Officer, and Prof. Ruonan Han took over this role effective January 2023.

Three new courses offered for the first time this year have started to use the optics room: 6.S046 (Silicon Photonics), 6.2400 (Introduction to Quantum System Engineering) and 6.2410 (Quantum Engineering Platforms). Two additional classes added to the rest of the Department Teaching Labs this year are 6.4800 (Biomedical Systems: Modeling and Inference), and 6.190 (Introduction to Programming in C and Assembly).

Recently, 90 new Dell computers were acquired to better support lab work of 6.115, 6.131, 6.A48 and 6.2030. With the Department of Facilities, architect design on the renovation of the lab space in 38-601 is being finalized and the renovation is expected to commence shortly.

## Engineering Design Studio

The Engineering Design Studio (EDS) within the Teaching Laboratories remains a campus hub for students to design and fabricate ideas requiring professional and high-power equipment. EDS recently added a Stratasys F120 3D printer with dissolvable support material that is free for student use for classwork (in support of multiple courses), research, and personal projects.



*A student in the lab section of 6.3100, "Feedback System Design", taught by Denny Freeman. Photo credit: Gretchen Ertl*

## EECS Alliance and the 6A Internship Program

EECS Professor Mohammad Alizadeh succeeded Tomás Palacios as Director of the 6A program effective Spring of 2023, with Ryan McCarthy as the Program Manager for the EECS Alliance and Priscilla Capistrano as Student/Industry Engagement Coordinator for the 6A program.

The EECS Alliance Program provides companies and organizations unparalleled access to EECS students for internships, post graduate employment, networking, and collaborations. Benefits include: participation in the EECS Career Fair, promoting job opportunities with the student body, on-campus recruitment events, and more.

One of the most important benefits in joining the Alliance is participating in the 6A Internship Program (6A), which allows students to pursue full-time internships in industry and government labs. Many of the students pursue a project at a member organization while simultaneously working towards their degrees and MEng theses.



193 EECS students applied during the 2022 fall recruitment and 175 students applied during the 2023 spring recruitment seasons. 45 received offers from various 6-A companies. 42 students accepted 6-A company offers and were admitted into the program, 5 of whom are undergraduate students on work assignment during the summer term. 14 M.Eng. students worked on their assignments during the 2023 spring/summer terms as well as 2023 summer/fall terms. In addition, 16 PhD students worked on assignments during the summer term. Also, two students from the previous year have continued on to their M.Eng. work assignments.

Participating companies in the EECS Alliance and 6A program include Analog Devices, Inc., Bose, Cadence, Cambridge Mobile Telematics (CMT), IBM Research, Iterative Scopes, Lawrence Livermore National Laboratory, NetApp, NASA Jet Propulsion Laboratory, Mercari, MIT-IBM Watson AI Lab, MIT Lincoln Laboratory, NVIDIA, and Sky, Dropbox, Instadeep, AMD, and more.



*Jerome Sanders, from Cisco's Emerging Technologies & Incubation division, speaks to students at an Alliance event.*

The Alliance was ultimately designed to help students envision a variety of career paths. We designed several activities to help with this initiative, including the Career Inspiration Series hosted by the EECS Alliance. Below are the companies and events we hosted in the Spring of 2023:

February 14 - Tesla Recruiting Session

February 15 - Jane Street, D.E. Shaw & Co. and NVIDIA Panel

February 23 - Career Inspiration Series PTC

February 28 - Electrical Engineering in the US Air Force/Space Force

March 2 - Career Inspiration Series Disney/ESPN

March 9 - Career Inspiration Series Evonik

March 16 - Five Rings Women's Collective Afternoon Tea

- March 16 - Career Inspiration Series CIA
- April 4 - CIA Recruiting Session
- April 11 - TechTalk Instadeep
- April 12 - Jane Street Student Event
- April 12 - Boeing/Wisk Talk and Networking
- April 13 - Career Inspiration Series Tina Chan Reich
- April 18 - Lunch and Coffee Chat with Instadeep
- April 20 - Career Inspiration Series Cisco



*Students gather at the annual Career Fair.*

## **EECS Graduate Program**

### **Overview**

The EECS doctoral (PhD) graduate program is a milestone-based advanced education with a limited number of requirements. Individuals entering, after earning the bachelor's degree, will be required to complete 66 units of graduate coursework along with a thesis research proposal and thesis to earn a Master of Science (SM) degree. Along with the SM degree, the other doctoral-degree requirements include (i) completion of the technical qualification evaluation (TQE), consisting of four graduate subjects in EECS, and (ii) the research qualification examination (RQE), and (iii) including completion of a minor program (two

coherently linked subjects), (iv) completion of a teaching assistantship, and (v) completion of a doctoral thesis with a public thesis defense, and (vi) Professional Perspective Requirement and is part of both the SM degree (1 unit) and the PhD degree (2 units).

### **Graduate Admissions, Fellowships, Enrollments, Graduates**

During the 2023 admissions season, we received 4,019 applications; that figure represents a 13 percent increase in applications from 2022. Ultimately, 229 students were admitted into our graduate program, representing roughly 6 percent of all applications. In the fall 2023 semester, 170 new students will join our doctoral graduate program.

The 2023 class of graduate students comprises 44 women and 5 URM students. All students who are admitted into our graduate program are provided full financial support in the form of a fellowship, a research or teaching assistantship, or through financial support provided by EECS. In spring 2023, 328 students (44%) received a fellowship.

As of June 30, 2023, we have 752 active EECS graduate students, with 206 women students (27% overall). Of these current students, 53% hold international citizenship. The graduate student body is 40% electrical engineering (of which 29% are women) and 60% computer science (of which 26% are women).

Between September 2022 and June 2023, EECS graduated students in September, February and in June, awarding 483 advanced degrees: 240 MEng degrees, 122 SM degrees, 1 Engineering degree, and 120 PhD degrees.



*From left to right, Kate Xu, Anushka Ray, Shobhita Sundaram, Neha Hulkund, Sohini Kar, and Megan Wei hold up their diplomas at the Advanced Degree Ceremony. Photo credit: Randall Garnick.*

## Graduate Program Diversity and Outreach

To support the diversity of applicants, the EECS Graduate Office staff and faculty regularly participate in MIT's Institute-wide recruiting efforts and specifically support MIT's Minority Summer Research Program (MSRP). Once admitted applicants become part of the EECS community, they can attend networking and mentoring seminars for women each fall (with reunions in the spring), as well as other events for individuals who may benefit from weekly group meetings and discussion.

## Thriving Stars

EECS continues with our Thriving Stars program's ambitious effort to bring our doctoral graduate program to gender parity and increase the representation of women in the EECS doctoral program with an aggressive timeframe - five years. This goal requires a holistic approach, addressing recruitment, enrollment, community and visibility.

Events under the Thriving Stars "umbrella" during 2022-23 included:

- Multiple Zoom-based webinars with targeted audiences
- Regular "graduate women in STEM" breakfasts featuring guest speakers
- A grad/undergraduate mixer designed to foster networking and mentorship
- Social opportunities building community
- The second-annual Thriving Stars summit, showcasing the groundbreaking work of graduate women in healthcare and medical technology

In 2022-23, the second year of Thriving Stars' implementation, applications from female candidates rose 22% from last year, while the yield of admitted women students enrolling in the PhD program increased from 68% to 72%. The number of women enrolling in our PhD program, 48, is a historic high absolute number.

Additionally, the overall yield of admitted candidates enrolling in our PhD program is a historic high for the department (74%). We expected that Thriving Stars would be a positive influence on the entire PhD program, and this may be evidence of such an influence.



*At the second annual Thriving Stars summit, connections are formed across eras of MIT. From left to right: MIT President Emerita and Thriving Stars Advisory Board Member Susan Hockfield; Executive Director of the MIT Jameel Clinic Ignacio Fuentes; EECS Assistant Professor Ashia Wilson; Thriving Stars Advisory Board member and Professor of ECE Carol Espy-Wilson.*

## EECS Visit Days for Newly Admitted Graduate Students

EECS Visit Days ran in person from March 2-5, 2023 (the first time since the pandemic that Visit Days had been held in person). They included research sessions; a nuts-and-bolts learning session focusing on degree requirements, finances, etc; panel talks from recent alumni, and social hours.

## EECS Graduate Student Organizations

There are a number of organizations (Graduate Women of Course 6, Graduate Student Association, peer mediation group EECS REFS, and Graduate Application Assistance Program) that are funded by the EECS department to support both underrepresented gender-marginalized persons specifically, as well as to support grad students more broadly.

Additionally, Tools for Honing Resilience and Inspiring Voices of Empowerment, or THRIVE, provides peer-to-peer support to enhance diversity, equity, inclusion and mental health. Additional support for the graduate student body is provided by the Graduate Student Association (GSA) and by the EECS REFS (Resources for Easing Friction and Stress) group.

## Resource Development

Within the 2022-23 year, and in collaboration with MIT's Office of Resource Development, EECS raised over \$6,000,000 in funds to support various critical initiatives, with a primary focus on Thriving Stars and graduate fellowships.

## Diversity, Equity and Inclusion

DEI work at the EECS department level is structured around three areas of change: 1) Structural change (equity) 2) Department composition (diversity) and 3) Community support (inclusion). DEI work is currently being led by two faculty equity officers: Leslie Kolodziejcki and Fredo Durand, and the Diversity, Equity, and Inclusion Program Director, Amanda Beyer Purvis.

In AY22-23:

- Structural change work centered on completing our Strategic Plan for Inclusive Excellence which includes six overarching goals and follows the three pillars of the MIT-wide strategic action plan. Additionally, the EECS Grad Admission Task Force did structural work in reviewing EECS PhD graduate admissions to identify and improve equitable practices and policies. The committee completed their work and generated recommendations for the department that will be reviewed in the coming year.
- Department composition work centered on providing funding and people-power for EECS to attend conferences that promote diversity in the field and recruit student applications at all levels. More than 30 students in EECS attended a conference to engage with community at a national level. Additionally, the DEI Program Director Amanda Beyer-Purvis is partnering with the Office of Graduate Education to align and amplify partnerships with HBCUs, recruit underrepresented students, and maximize EECS participation and expansion of the MIT Summer Research Program.

- Community support work centered around creating community programming targeted to increase belonging for students, a project in partnership with the EECS Undergrad Office. Additionally, EECS engaged intentionally in supporting grad student groups like MIT University Center for Exemplary Mentoring (UCEM), THRIVE, and the Graduate Application Assistance Program (GAAP) in their efforts to support community in our grad student body.

## Educational and Outreach Initiatives

### EECS Communication Lab: Engineers Helping Engineers

The [EECS Communication Lab](#) (Comm Lab) has served more than 1,130 students and postdocs between September 2016 and June 2023, providing them with more than 2,575 free one-on-one coaching sessions. The website continues to be accessed more frequently, with 103,200 pageviews from July 2022-June 2023, a 90% year-over-year increase.

In Fall 2022, the Comm Lab launched a new experiential learning class, 6.S975 Experience in Technical Communication. This new structure allows the continued participation of both domestic and international graduate students in the Communication Fellowship, a unique training and service opportunity.

During 2022-2023, the Comm Lab partnered with faculty in several classes (6.1060, 6.8410, 6.2540, 6.506) to coach students and provide in-class communication workshops. EECS Comm Lab Manager, Dr. Deanna Montgomery, served as co-instructor for Academic Job Search (6.9970). In Fall 2022, the course had 40 participants and 15 listeners (49% PhD students, 51% postdocs). The Comm Lab also partnered with other department groups (individual research groups, Summer Geometry Initiative, Microsystems Technology Laboratories Annual Research Conference) to provide tailored workshops and other communication support and hosted events open to the MIT EECS community.

2022-2023 academic year events:

- Grant proposal workshop
- Fundamentals of Communicating with the Public (6 sessions)
- How to Communicate in Grad School panel discussion
- NSF Graduate Research Fellowships Program (GRFP) workshop
- MEng Thesis Proposal workshop (2 sessions)
- Faculty job talk workshop
- Research Qualifying Examination (RQE) workshop
- Why You Should be a Professor and How to Become One (4 sessions)

## EECS Contributions to MITx

Over the 2022-23 year, EECS offered a variety of classes through the MITx online portal. A list of subjects follows, with the enrollment and certificate numbers for each:

6.00.1x Introduction to Computer Science and Programming Using Python remains our most popular subject, with over 78,000 registered learners (not including those currently registered for the Summer '23 term).

6.00.1x Introduction to Computer Science and Programming Using Python  
Terms: SU22, SP23 (SU '23 is still live and is not counted in the figures below)  
Registered: 78,948; Explored: 6,822; Certificate earned: 1,226

6.00.2x Introduction to Computational Thinking and Data Science  
Terms: FL22, SP23 (SU '23 is still live and is not counted in the figures below)  
Registered: 17,280; Explored: 1,332; Certificate earned: 525

6.419x Data Analysis: Statistical Modeling and Computation in Applications  
Terms: SP23  
Registered: 9,127; Explored: 948; Certificate earned: 404

6.431x Probability: The Science of Uncertainty and Data  
Terms: SU22  
Registered: 20,863; Explored: 1,689; Certificate earned: 954

6.86x Machine Learning with Python: from Linear Models to Deep Learning  
Terms: SP23  
Registered: 34,897; Explored: 2,193; Certificate earned: 1,335

6.UWTDx Understanding the Word Through Data  
Terms: FL22, SP23  
Registered: 3,328; Explored: 263; Certificate earned: 52

## Faculty Notes

### Faculty Promotions

Associate Professor without Tenure:

- Adam Belay
- Mohsen Ghaffari (hired on at this level)
- Manya Ghobadi
- Song Han
- Phillip Isola
- Arvind Satyanarayan
- Christina Delimitrou

Associate Professor with Tenure:

- Guy Bresler
- Stefanie Jegelka
- Tim Kraska
- Luqiao Liu

Full Professor:

- Caroline Uhler
- Yury Polyanskiy
- Martin Wainwright
- Adam Chlipala
- David Sontag
- Virginia Vassilevska Williams

**Other Updates**

Sabbatical Leave:

- Konstantinos Daskalakis
- Erik Demaine
- John Guttag
- Peter Hagelstein
- Ruonan Han
- Piotr Indyk
- Leslie Kaelbling
- Harry Lee
- David Sontag
- Caroline Uhler

Junior Research Leave:

- Phillip Isola
- Julian Shun
- Jonathan Ragan-Kelley

Family Release:

- Stefanie Mueller



On Leave:

- Martin Schmidt (Until June of 2024)
- Tim Kraska

Retired/resigned:

- Tim Lu

Loss of Faculty:

- Louis Braid
- Markus Zahn
- Dick Thornton
- Sanjoy Mitter
- Joel Moses
- Carl Hewitt

### **New Faculty**

Three new faculty members started in EECS during 2022-2023:

- Mina Konakovic Lukovic joined as an assistant Professor in July 2022.
- Vincent Sitzmann joined as an assistant professor in July 2022.
- Mohsen Ghaffari joined as an associate Professor without tenure in April 2022
- Christina Delimitrou joined as an assistant professor in September 2022 (and was promoted to associate professor without tenure in January 2023)

Two new SCC shared faculty started during 2022-2023:

- Manish Raghavan joined the Sloan School of Management and the Department of EECS as an assistant professor in September 2022
- Nidhi Seethapathi joined the Department of Brain and Cognitive Sciences and the Department of EECS in January 2022

### **New Lecturers**

EECS hired the following lecturers between 2022-23:

- Brynmor Chapman
- Kyle Keane
- Vincent Monardo
- Srinivasan Raghuraman

- Shen Shen
- Christopher Tanner
- Andrew Wang – Lecturer/Digital Learning Lab Fellow

**New Career Development Professorships (all effective July 21)**

- Phillip Isola - Class of 1948 Career Development Professor
- Stefanie Mueller -TIBCO Career Development Professor
- Manish Raghavan - Drew Houston (2005) Career Development Professor

**New Full Professorships (all effective July 21)**

- Karl Berggren - Joseph F. and Nancy P. Keithley Professor
- Costis Daskalakis - inaugural Armen Avanesians (1982) Professor
- Polina Golland - inaugural Sunlin (1996) and Priscilla Chou Professor.
- Martha Gray - Whitaker Professor in Biomedical Engineering
- Muriel Médard - NEC Professor of Software Science and Engineering
- Will Oliver - Henry Ellis Warren (1894) Professor in Electrical Engineering and Computer Sciences
- David Perreault - Ford Foundation Professor of Engineering
- Martin Wainwright - Cecil H. Green Professor

**Awards and Honors**

**Faculty Awards and Honors**

Pulkit Agrawal

- Multidisciplinary University Research Initiative (MURI) award for 2023

Mohammah Alizadeh

- 2022 ACM Grace Murray Hopper Award

Jacob Andreas

- Junior Bose teaching award.

Regina Barzilay

- elected to the National Academy of Engineering

Connor Wilson Coley

- AI2050 Early Career Fellows by Schmidt Futures.

Costis Daskalakis

- 2022 cohort of ACM Fellows

Manya Ghobadi

- ACM-W Rising Star Award.

Dylan Hadfield-Menell

- AI2050 Early Career Fellows by Schmidt Futures.

Ruonan Han

- 2023 IEEE Solid-State Circuits Society New Frontier Award.

Song Han

- 2023 Sloan Research Fellows by the Sloan Foundation.

Piotr Indyk

- elected a member of the American Academy of Arts & Sciences.

Yael Tauman Kalai

- 2022 ACM Prize in Computing

Dina Katabi

- elected a member of the National Academy of Sciences.

Farnaz Niroui

- DARPA Young Faculty Award.

Jelena Notaros

- 2022 Advanced Photonics Congress Student Paper Prize at Optica's Advanced Photonics Congress, along with her coauthor Sabrina Corsetti.
- NSF Career Award in 2022

David Perreault

- 2024 IEEE William E. Newell Power Electronics Award

Jonathan Ragan-Kelley

- 2023 Sloan Research Fellow

Ronitt Rubinfeld

- 2023 Guggenheim Fellow

Devavrat Shah, along with coauthors Mohammad Alizadeh, Abdullah Alomar, Anish Agarwal, and collaborators from MIT CSAIL

- Best Paper Award at the 20th USENIX Symposium on Networked Systems Design and Implementation

Justin Solomon

- Harold E. Edgerton Faculty Achievement Award

Russell Tedrake

- MIT School of Engineering's 2023 Teaching With Digital Technology Award.

Caroline Uhler

- named a Fellow of the Society for Industrial and Applied Mathematics (SIAM), Class of 2023
- NIH New Innovator Award for 2022.

Joel Voldman

- MIT School of Engineering's 2023 Teaching With Digital Technology Award.

Mengjia Yan

- Intel Rising Star Faculty Award 2022

## **Staff Notes**

### **Staff Awards and Honors**

- Rachida Kernis - 2023 MIT Excellence Award for Sustaining MIT
- Janet Fischer - Infinite Mile 2023 Ellen J. Mandigo Award For Outstanding Service

### **Other Staff Notes**

Additionally, EECS hired its inaugural Human Resources Administrator, Devin DiBernardo.

**Asu Ozdaglar**

**Mathworks Professor of Electrical Engineering and Computer Science**

**Department Head**