

Department of Electrical and Computer Engineering

Lawrence Pileggi, Coraluppi Head and Tanoto Professor

James Bain, Associate Head, Academic Affairs

Shawn Blanton, Associate Head, Research

Tamal Mukherjee, Associate Head, Students
www.ece.cmu.edu (<http://www.ece.cmu.edu>)

The field of electrical and computer engineering encompasses a remarkably diverse and expanding set of technologies, including embedded systems, intelligent physical systems, real-time software, distributed computing, mobile computing, cloud computing, digital signal processing, integrated circuits and electronics, computer architecture, intelligent robotic systems, computer-based control systems, telecommunications, computer networking, wireless communication systems, signal and information processing, multimedia systems, solid state physics and devices, microelectromechanical systems (MEMS), electromagnetic and electromechanical systems, and data storage systems. The extraordinary advances in these technologies during the last fifty years have impacted nearly every aspect of society and human activity. These advances have created new products and markets such as “smart” cars, cell phones and mobile computing systems, video games, and advanced medical systems for imaging, diagnosis, testing, and monitoring. These systems and products have served to enhance our quality of life and have also fueled the global economy. In short, the field of electrical and computer engineering has become central to society as we know it.

The Department of Electrical and Computer Engineering at Carnegie Mellon is actively engaged in education and research at the forefront of the existing and emerging technologies. Because of the diverse and broad nature of the field and the significant growth in knowledge in each of its sub areas, it is no longer possible for any single individual to know all aspects of electrical and computer engineering. Nevertheless, it is important that all electrical and computer engineers have a solid knowledge of the fundamentals with sufficient depth and breadth. Society is placing increasing demands on our graduates to apply their skills in new contexts. It is also placing increasing value on engineers who can cross traditional boundaries between disciplines and who can intelligently evaluate the broader consequences of their actions. Our curriculum is designed to produce world-class engineers who can meet these challenges.

Educational Outcomes and Objectives

The B.S. in Electrical and Computer Engineering is a broad and highly flexible degree program structured to provide students with a rich and comprehensive view of the profession. Minimal curriculum constraints enable every student to construct their own unique program of study that fits their professional goals. Students are encouraged to explore multiple areas of theory and application. Our program is accredited by the Engineering Accreditation Commission of ABET, <http://www.abet.org> (<http://www.abet.org/>). The Faculty of Electrical and Computer Engineering have adopted the following outcomes from ABET and have established the following objectives for the B.S. in Electrical and Computer Engineering curriculum:

Educational Outcomes

1. An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics
2. An ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors
3. An ability to communicate effectively with a range of audiences
4. An ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts
5. An ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives
6. An ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions
7. An ability to acquire and apply new knowledge as needed, using appropriate learning strategies.

ECE Education Objectives

The ECE program objectives are shown below. They represent our vision for what our students will be doing in their engineering careers five years after they have graduated. The principal behaviors we seek to foster in our students are *expertise*, *innovation* and *leadership*. Our graduates will be:

Experts

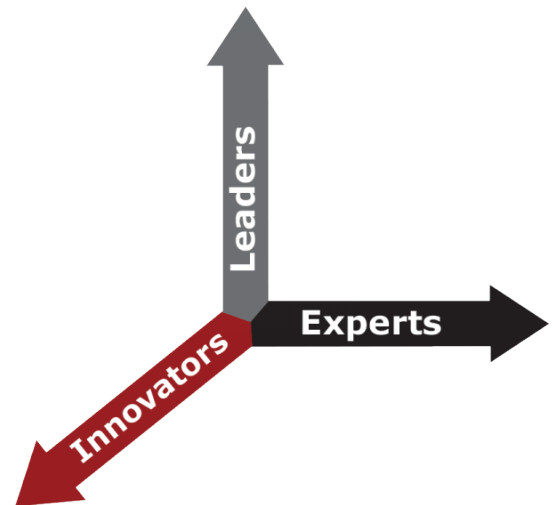
- They will solve problems by applying ECE fundamentals
- Their solutions will reflect depth of understanding in their sophistication.
- Their solutions will reflect breadth of understanding by drawing on multiple disciplines.

Innovators

- They will demonstrate creativity in their engineering practice.
- They will consider holistic systems-oriented approaches in their designs.
- They will think strategically in their planning and execution.

Leaders

- They will take initiative, and demonstrate resourcefulness.
- They will collaborate in multidisciplinary teams.
- They will be leaders in their organizations, their profession and in society.



Three dimensions of objectives for our graduates.

Curriculum Overview

The B.S. in Electrical and Computer Engineering is a broad and highly flexible ABET-accredited (<http://www.abet.org>) degree program structured to provide students with the smallest set of constraints consistent with a rich and comprehensive view of the profession. Students are encouraged and stimulated to explore multiple areas of theory and application from across the 5 principal undergraduate areas (<https://www.ece.cmu.edu/academics/bs-in-ece/academic-guide.html>) of Electrical and Computer Engineering. The sample curriculum (<http://coursecatalog.web.cmu.edu/schools-colleges/collegeofengineering/departmentofelectricalandcomputerengineering/#samplecurriculumtext>) highlights the flexibility of our curriculum while meeting the requirements listed below

Minimum total units required for B.S. in Electrical and Computer Engineering **379**

For detailed information and regulations of the curriculum along with the degree requirements and the most recent version of the ECE curriculum and course descriptions, please refer to the ECE Academic Guide (<http://www.ece.cmu.edu/programs-admissions/bachelors/academic-guide/>).

University Requirement

| | Units |
|------------------------------------|----------|
| 99-101 Computing @ Carnegie Mellon | 3 |
| | 3 |

CIT Requirements (see CIT section of the catalog for specifics (<http://coursecatalog.web.cmu.edu/schools-colleges/collegeofengineering/>)):

| | Units |
|--|------------|
| CIT General Education | 72 |
| 21-120 Differential and Integral Calculus | 10 |
| 21-122 Integration and Approximation | 10 |
| One other introductory engineering course (generally taken during the freshman year) | 12 |
| 33-141 Physics I for Engineering Students | 12 |
| 33-142 Physics II for Engineering and Physics Students | 12 |
| 15-112 Fundamentals of Programming and Computer Science | 12 |
| | 140 |

GENERAL TECHNICAL REQUIREMENTS:

| | Units |
|--|-----------|
| Two Math/Science electives ¹ | 18 |
| Probability Requirement | |
| 21-325 Probability | 9 |
| or 36-219 Probability Theory and Random Processes | |
| or 36-225 Introduction to Probability Theory | |
| 18-202 Mathematical Foundations of Electrical Engineering ² | 12 |
| 21-127 Concepts of Mathematics ³ | 12 |
| or 21-128 Mathematical Concepts and Proofs | |
| 15-122 Principles of Imperative Computation | 10 |
| | 61 |

¹The Math/Science Electives may be satisfied by any course in The Mellon College of Science or the Department of Statistics except for: 100-level courses in Mathematics or Statistics, and courses designed for non-science or engineering majors, such as (but not limited to) 09-103, 09-104, 21-240, 21-257, 33-115, 33-120, 33-124, 36-201, 36-202, 36-203, 36-207, 36-208, 36-209, 36-210, 36-247, 36-309, 36-310. Mathematics courses of particular interest to students in ECE are: 21-228 Discrete Mathematics, 21-241 Matrices and Linear Transformations, 21-259 Calculus in Three Dimensions, 21-260 Differential Equations.

²This course can also be substituted by a combination of two of the following courses: 21-254, 21-259, 21-260, 21-241, 21-242, 21-268. Note that the combined total will therefore be 18 units.

³Effective Fall 2022. Prior to Fall 2022, 21-127 was 10 units.

ECE COURSE requirements:

For detailed information and regulations along with the degree requirements and the most recent version of the ECE curriculum and course descriptions, please refer to the ECE Academic Guide (<https://www.ece.cmu.edu/academics/bs-in-ece/academic-guide.html>).

| | Units |
|---|------------|
| ECE CORE COURSES | |
| 18-100 Introduction to Electrical and Computer Engineering | 12 |
| 18-200 ECE Sophomore Seminar | 1 |
| 18-213 Introduction to Computer Systems | 12 |
| 18-220 Electronic Devices and Analog Circuits | 12 |
| 18-240 Structure and Design of Digital Systems | 12 |
| 18-290 Signals and Systems | 12 |
| ECE AREA COURSES | |
| Two Area Courses from 1 of the 5 Areas within ECE | 24 |
| One additional Area Course from a second Area | 12 |
| ECE COVERAGE COURSES | |
| One Coverage Course (any additional ECE course or Approved CS course as listed on the ECE web site) | 12 |
| ECE CAPSTONE DESIGN | |
| Any 18-5xx course | 12 |
| | 121 |

FREE ELECTIVES 54 units (typ)*

*For most students, the curriculum above will result in a remainder of 54 units of free electives to achieve the 379 required total units.

A Free Elective is defined as any graded course offered by any academic unit of the university (including research institutes such as the Robotics Institute (<http://www.ri.cmu.edu/>) and S (<https://s3d.cmu.edu/>)).

Up to 9 units of Student Taught Courses (StuCO) and Physical Education courses, or other courses taken as Pass/Fail, may also be used toward Free Electives.

Transfer of courses from other high-quality universities may be accepted through submission of the Transfer Credit Request form on the CIT web page (https://engineering.cmu.edu/education/academic-policies/undergraduate-policies/transfer_credit/). Please see the CIT website (<https://engineering.cmu.edu/education/academic-policies/undergraduate-policies/transfer-credit.html>) for further information regarding the process.

The large number of units without categorical constraints provides the student, in consultation with their Advisor or Mentor, with the flexibility to design a rich educational program.

Sample Curriculum

The table below shows a possible roadmap through our broad and flexible curriculum. The ECE Academic Guide (<https://www.ece.cmu.edu/academics/bs-in-ece/academic-guide.html>) provides further alternatives.

For First-Year requirements, please see CIT section of the catalog for specifics (<http://coursecatalog.web.cmu.edu/schools-colleges/collegeofengineering/#firstyearforengineeringstudentstext>).

| First-Year | | Second-Year | |
|--|---|---|---|
| Fall | Spring | Fall | Spring |
| 18-100 Introduction to Electrical and Computer Engineering | Introductory Engineering Course | 18-200 ECE Sophomore Seminar | 18-2xx ECE Core course |
| 15-112 Fundamentals of Programming and Computer Science | 33-141 Physics I for Engineering Students | 18-2xx ECE Core Course | 21-127 Concepts of Mathematics or 18-202 Mathematical Foundations of Electrical Engineering |
| 21-120 Differential and Integral Calculus | 21-122 Integration and Approximation | 18-202 Mathematical Foundations of Electrical Engineering | 15-122 Principles of Imperative Computation |
| 76-101 Interpretation and Argument | General Education course | General Education course | 36-219 Probability Theory and Random Processes |
| 99-101 Computing @ Carnegie Mellon | | 33-142 Physics II for Engineering and Physics Students | General Education course |
| | | 39-210 Experiential Learning I | 39-220 Experiential Learning II |

| Third-Year | | Fourth-Year | |
|---|---|---|-----------------------------------|
| Fall | Spring | Fall | Spring |
| 18-2xx ECE Core course | 18-2xx ECE Core course | 18-xxx ECE Coverage course | 18-5xx ECE Capstone Design course |
| 18-3xx/4xx ECE Area 1 course (first course in Area) | 18-3xx/4xx ECE Area course (either 2nd course from Area 1 or the Area 2 course) | 18-3xx/4xx ECE Area course (either 2nd course from Area 1 or the Area 2 course) | General Education course |
| General Education course | Math/Science Elective 2 | General Education course | Free Elective |
| Math/Science Elective 1 | General Education course | Free Elective | Free Elective |
| Free Elective | Free Elective | Free Elective | Free Elective |
| 39-310 Experiential Learning III | | | |

Academic Policies

Policy on ECE Coverage Courses with Fewer than 12 Units

The basic curriculum requirements for Area courses, Coverage and Capstone Design are stated in terms of courses rather than units. The nominal total of 60 units for these categories is determined by assuming that each course is 12 units. In the event that courses with fewer than 12 units are used to satisfy some or all of these requirements, additional courses from the ECE coverage lists must be taken until the total units in ECE courses beyond the core meets or exceeds 60 units. Any ECE coverage course is acceptable, and any excess units beyond the required 60 may be counted as free elective credit.

Prerequisite Grade Requirements

Many ECE courses require a prerequisite course or courses. In most cases, the minimum grade required in a prerequisite to proceed on to the next course is a C. All prerequisites are listed in the registration system.

QPA Requirement and Overload Policy

An overload is defined as any schedule with more than 54 units in one semester. A student will only be permitted to overload by 12 units if she or he achieved an overall QPA of at least 3.5 out of 4.0. If the student's overall QPA is below a 3.5, then the QPA of the previous semester for which he or she is registering will instead be utilized. If that QPA is at least a 3.5 then the student will be permitted to Overload.

Grade Policy for Math Courses

1. CIT states that all mathematics (21-xxx) courses required* for the engineering degree taken at Carnegie Mellon must have a minimum grade of C in order to be counted toward the graduation requirement for the BS engineering degree.
2. A minimum grade of C must be achieved in any required mathematics (21-xxx) course that is a prerequisite for the next higher level required mathematics (21-xxx) course.
3. In addition, ECE requires that 18-202 Mathematical Foundations of Electrical Engineering must be completed with a grade of C or better.

*Elective mathematics courses (like the math/science electives required for ECE) are not included in this policy

Pass/Fail policy

Up to 9 units of StuCo and/or Physical Education courses or other courses taken as Pass/Fail may be used toward Free Electives. ECE core courses may not be taken as pass/fail. ECE project-based courses (including capstone design courses) may not be taken pass/fail. No ECE requirements may be fulfilled using a pass/fail course (except for 99-10x and 18-200)

Other Graduation Requirements

To be eligible to graduate, undergraduate students must complete all course requirements for their program with a cumulative Quality Point Average of at least 2.0. For undergraduate students who enrolled at Carnegie Mellon as freshmen and whose freshman grades cause the cumulative QPA to fall below 2.0, this requirement is modified to be a cumulative QPA of at least 2.0 for all courses taken after the freshman year. Note, however, the cumulative QPA that appears on the student's final transcript will be calculated based on all grades in all courses taken, including freshman year. Students are encouraged to confirm all graduation requirements with their academic advisor.

CIT has the following requirement for graduation. "Students must complete the requirements for their specified degrees with a cumulative quality point average of 2.00 or higher for all courses taken after the freshman year [this

is the CIT QPA on the Academic Audit]. In addition, a student is expected to achieve a cumulative quality point average of 2.00 in a series of core departmental courses."

In ECE, this means that the student must complete 18-100 Introduction to Electrical and Computer Engineering, ECE Core, Area Courses, Coverage, and Capstone Design courses with a minimum QPA of 2.0 to graduate. When more than one possibility exists for meeting a specific requirement (e.g., Area Course), the courses used for calculating the ECE QPA will be chosen so as to maximize the QPA. Similarly, when an ECE course is retaken, the better grade will be used in the computation of the minimum QPA for the ECE QPA requirement to graduate.

Other Opportunities in ECE

ECE Cooperative Education Program

Our Cooperative Education Program invites students to gain valuable experience in employment that relates directly to their major and career goals. At the same time, it provides employers with opportunities to evaluate students as potential full-time employees, while having them complete meaningful projects. Participation in this program is voluntary, and obtaining a cooperative education assignment is competitive.

Due to federal restrictions on student work experiences, international students are not eligible for co-ops. Please visit the ECE CPT page (<http://www.ece.cmu.edu/programs-admissions/bachelors/cpt.html>) for information regarding international student internships.

The co-op experience

We require a minimum of eight months of co-op experience to identify the work experience as a co-op. Students must have minimally completed their sophomore year to qualify for application to a co-op and should connect with their Academic Advisor for information on how to apply. While on co-op assignment, students are participating in a recognized CIT educational program, retaining their full-time student status, akin to our students who study abroad in established exchange programs (such as EPFL) for one or two semesters. The Cooperative Education Program agreement may be discontinued if the employers do not provide the students with career-related work experience or if the students do not meet the accepted level of performance as defined by the employers.

Upon returning to Carnegie Mellon, the students are required to submit for approval the following two documents to the ECE Undergraduate Office: a three to five page technical report of the Co-Op work, and a one page assessment and evaluation of the Co-Op experience.

Students may obtain more detailed information through the ECE department (<http://www.ece.cmu.edu/programs-admissions/bachelors/cooperative-education-program.html>) or the Career and Professional Development Center (<http://www.cmu.edu/career/>).

Teaching Assistantships

Teaching Assistants are a vital part of successful ECE course delivery. All ECE students will receive an email each semester when applications open for the upcoming semester, typically around the date the Schedule of Classes is published. Students are encouraged to communicate with the faculty of any course(s) they are interested in supporting, who can discuss the course expectations and staffing needs. Please see the ECE Teaching Assistantship website (<https://www.ece.cmu.edu/insider/teaching-opportunities.html>) for further information regarding these opportunities and how to apply.

Integrated M.S./B.S. Degrees Program

The Integrated Master's/Bachelor's program (<http://www.ece.cmu.edu/programs-admissions/integrated/>) (otherwise known as the IMB program) is an exciting opportunity for students who excel academically to achieve not just a Bachelor's degree in ECE, but also a Master's degree- through our Professional MS degree program-without needing to apply separately.

This means no application fee, and no need to take the GRE (Graduate Record Exam). In order to be awarded the MS degree in the IMB program, the student must also earn their BS degree, either simultaneously with the MS degree or at least one semester prior to the awarding of the MS degree. If a course is eligible for the MS degree but must be used to complete the BS degree, the BS degree takes priority over the MS degree.

If a student is at least a 2nd semester junior, has completed at least 270 units and has at least an overall 3.00 QPA, he or she is guaranteed admission into the Professional MS degree in ECE through the IMB program. To be officially admitted, the student must complete the IMB Program form.

If a student does not meet the exact overall 3.00 QPA requirement, he or she is eligible to petition for his or her admission into the IMB program

during his or her senior year. Students may obtain the petition forms through a meeting with their assigned academic advisor.

Professional MS Degree Requirements:

Please see the ECE web site for the requirements for the Professional MS degree (<http://www.ece.cmu.edu/programs-admissions/masters/ms-requirements.html>). For students in the ECE IMB program, all requirements for the Professional MS degree are in addition to the requirements for the BS in ECE. No requirements for the MS degree may be used in any way toward the BS degree, including minors, additional majors or dual degrees.

Residency requirements and financial impacts:

Once a student in the IMB program has completed all of the requirements for the BS degree and it is certified, the student will officially graduate with the BS degree and the student will be in graduate status for the subsequent term of enrollment. Once a student's undergraduate degree has been certified, no more courses may then be applied toward the BS degree. This includes courses toward minors and additional majors, although students pursuing an undergraduate dual degree with another department may still continue to apply additional coursework toward that second degree. Students should consult with Enrollment Services to understand how entering graduate status will affect financial aid, and with their academic advisor to determine a course schedule.

If a student takes more than 8 semesters to complete both the BS and MS degrees, then he or she must be in graduate status for at least one semester before graduating with the MS degree.

Faculty

GEORGE AMVROSIADIS, Assistant Research Professor of Electrical and Computer Engineering – Ph.D., University of Toronto, Canada; Carnegie Mellon, 2018–

JIM BAIN, Associate Department Head for Academic Affairs and Professor of Electrical and Computer Engineering and Materials Science Engineering; Associate Director, DSSC – Ph.D., Stanford University; Carnegie Mellon, 1993–

LUJO BAUER, Professor of Electrical and Computer Engineering – Ph.D., Princeton University; Carnegie Mellon, 2005–

THEO BENSON, Professor of Electrical and Computer Engineering – Ph.D., University of Wisconsin-Madison; Carnegie Mellon, 2022–

VIJAYAKUMAR BHAGAVATULA, U.A. and Helen Witaker Professor of Electrical and Computer Engineering, Affiliated Faculty, DSSC – Ph.D., Carnegie Mellon University; Carnegie Mellon, 1982–

SHAWN BLANTON, Associate Department Head for Research; Joseph F. and Nancy Keithley Professor of Electrical and Computer Engineering – Ph.D., University of Michigan; Carnegie Mellon, 1995–

DAVID BRUMLEY, Professor of Electrical and Computer Engineering – Ph.D., Carnegie Mellon University; Carnegie Mellon, 2008–

MARK BUDNIK, Teaching Professor of Electrical and Computer Engineering – Ph.D., Purdue University; Carnegie Mellon, 2021–

L. RICHARD CARLEY, Professor of Electrical and Computer Engineering; Affiliated Faculty, DSSC – Ph.D., Massachusetts Institute of Technology; Carnegie Mellon, 1984–

MAYSAM CHAMANZAR, Dr. William D. and Nancy W. Strecker Career Development Associate Professor, Electrical and Computer Engineering – Ph.D., Georgia Institute of Technology; Carnegie Mellon, 2015–

VANESSA CHEN, Assistant Professor of Electrical and Computer Engineering – Ph.D., Carnegie Mellon University; Carnegie Mellon, 2019–

YUEJIE CHI, Professor of Electrical and Computer Engineering – Ph.D., Princeton University; Carnegie Mellon, 2018–

MARC DANDIN, Assistant Professor of Electrical and Computer Engineering – Ph.D., University of Maryland, College Park; Carnegie Mellon, 2019–

HAKAN ERDOGMUS, Teaching Professor of Electrical and Computer Engineering; Carnegie Mellon University Silicon Valley – Ph.D., Université du Québec; Carnegie Mellon, 2014–

GIULIA FANTI, Assistant Professor of Electrical and Computer Engineering – Ph.D., University of California at Berkeley; Carnegie Mellon, 2017–

GARY FEDDER, Howard M. Wilkoff Professor of Electrical and Computer Engineering; Co-Director MEMS, Affiliated Faculty DSSC – Ph.D., University of California at Berkeley; Carnegie Mellon, 1994–

FRANZ FRANCHETTI, Kavčić-Moura Professor of Electrical and Computer Engineering; Associate Dean for Research, College of Engineering, Director

Engineering Research Accelerator – Ph.D., Vienna University of Technology; Carnegie Mellon, 2001–

GREGORY R. GANGER, Jatras Professor of Electrical and Computer Engineering; Director Parallel Data Lab – Ph.D., University of Michigan; Carnegie Mellon, 1997–

PHILLIP GIBBONS, Professor of Electrical and Computer Engineering and Computer Science – Ph.D., University of California at Berkeley; Carnegie Mellon, 2015–

VIRGIL GLIGOR, Professor of Electrical and Computer Engineering; Co-Director CyLab – Ph.D., University of California at Berkeley; Carnegie Mellon, 2008–

PULKIT GROVER, Angel Jordan Professor of Electrical and Computer Engineering – Ph.D., University of California at Berkeley; Carnegie Mellon, 2013–

ASSANE GUEYE, Assistant Teaching Faculty Professor of Electrical and Computer Engineering; Carnegie Mellon University Africa – Ph.D., University of California at Berkeley; Carnegie Mellon, 2020–

JAMES HOE, Professor of Electrical and Computer Engineering – Ph.D., Massachusetts Institute of Technology; Carnegie Mellon, 2000–

LIMIN JIA, Associate Research Professor of Electrical and Computer Engineering; Affiliated Faculty CyLab – Ph.D., Princeton University; Carnegie Mellon, 2013–

CARLEE JOE-WONG, Robert E. Doherty Career Development Professor of Electrical and Computer Engineering – Ph.D., Princeton University; Carnegie Mellon, 2016–

GAURI JOSHI, Associate Professor of Electrical and Computer Engineering – Ph.D., Massachusetts Institute of Technology; Carnegie Mellon, 2017–

SOUMMYA KAR, Professor of Electrical and Computer Engineering – Ph.D., Carnegie Mellon University; Carnegie Mellon, 2011–

GREGORY KESDEN, Teaching Professor of Electrical and Computer Engineering – MCS, Clemson University; Carnegie Mellon, 2017–

HYONG S. KIM, Drew D. Perkins Professor of Electrical and Computer Engineering; Director CMU-Thailand – Ph.D., University of Toronto; Carnegie Mellon, 1990–

PHILIP J. KOOPMAN, Associate Professor of Electrical and Computer Engineering and Computer Science – Ph.D., Carnegie Mellon University; Carnegie Mellon, 1989–

SWARUN S. KUMAR, Associate Professor of Electrical and Computer Engineering – Ph.D., Massachusetts Institute of Technology; Carnegie Mellon, 2015–

QING LI, Associate Professor of Electrical and Computer Engineering – Ph.D., Georgia Institute of Technology; Carnegie Mellon, 2018–

TZE MENG LOW, Associate Research Professor of Electrical and Computer Engineering – Ph.D., University of Texas at Austin; Carnegie Mellon, 2013–

BRANDON LUCIA, Sathaye Family Foundation Career Development Professor of Electrical and Computer Engineering – Ph.D., University of Washington; Carnegie Mellon, 2014–

KEN MAI, Principal Systems Scientist of Electrical and Computer Engineering – Ph.D., Stanford University; Carnegie Mellon, 2005–

CRAIG MILLER, Research Professor of Electrical and Computer Engineering – Ph.D., University of Michigan; Carnegie Mellon, 2020–

M. GRANGER MORGAN, Professor of Electrical and Computer Engineering; Hamerschlag University Professor of Engineering and Public Policy – Ph.D., University of California at San Diego; Carnegie Mellon, 1974–

JOSÉ M. F. MOURA, Philip L. and Marsha Dowd University Professor of Electrical and Computer Engineering – Ph.D., Massachusetts Institute of Technology; Carnegie Mellon, 1986–

TAMAL MUKHERJEE, Associate Department Head for Students and Professor of Electrical and Computer Engineering – Ph.D., Carnegie Mellon University; Carnegie Mellon, 1996–

WILLIAM NACE, Teaching Professor of Electrical and Computer Engineering – Ph.D., Carnegie Mellon University; Carnegie Mellon, 2008–

YORIE NAKAHIRA, Assistant Professor of Electrical and Computer Engineering – Ph.D., California Institute of Technology; Carnegie Mellon, 2020–

PRIYA NARASIMHAN, Professor of Electrical and Computer Engineering – Ph.D., University of California at Santa Barbara; Carnegie Mellon, 2001–

- ROHIT NEGI, Professor of Electrical and Computer Engineering - Ph.D., Stanford University; Carnegie Mellon, 2000-
- DAVID O'HALLARON, Professor of Electrical and Computer Engineering and Computer Science - Ph.D., University of Virginia; Carnegie Mellon, 1989-
- AMRITANSHU PANDEY, Systems Scientist of Electrical and Computer Engineering - Ph.D., Carnegie Mellon University; Carnegie Mellon, 2019-
- BRYAN PARNO, Professor of Electrical and Computer Engineering and Computer Science - Ph.D., Carnegie Mellon University; Carnegie Mellon, 2017-
- GIANLUCA PIAZZA, STMicroelectronics Professor of Electrical and Computer Engineering; Director of Nanofab - Ph.D., University of California at Berkeley; Carnegie Mellon, 2012-
- LAWRENCE T. PILEGGI, Coraluppi Head and Tanoto Professor of Electrical and Computer Engineering - Ph.D., Carnegie Mellon University; Carnegie Mellon, 1996-
- CÉCILE PÉRAIRE, Teaching Professor of Electrical and Computer Engineering, Carnegie Mellon University Silicon Valley - Ph.D., École polytechnique fédérale de Lausanne, Switzerland; Carnegie Mellon, 2014-
- GUANNAN QU, Assistant Professor of Electrical and Computer Engineering - Ph.D., Harvard University; Carnegie Mellon, 2021-
- RAJ RAJKUMAR, George Westinghouse Professor of Electrical and Computer Engineering - Ph.D., Carnegie Mellon University; Carnegie Mellon, 1992-
- BARRY RAWN, Associate Teaching Professor of Electrical and Computer Engineering - Ph.D., University of Toronto; Carnegie Mellon, 2018-
- ANTHONY ROWE, Siewiorek and Walker Family Professor of Electrical and Computer Engineering - Ph.D., Carnegie Mellon University; Carnegie Mellon, 2009-
- WILLIAM SANDERS, Dr. William D. and Nancy W. Strecker Dean, College of Engineering Professor for Electrical and Computer Engineering - Ph.D., University of Michigan; Carnegie Mellon, 2020-
- ASWIN SANKARANARAYANAN, Professor of Electrical and Computer Engineering - Ph.D., University of Maryland; Carnegie Mellon, 2013-
- MARIOS SAVVIDES, Bossa Nova Robotics Professor of Artificial Intelligence for Electrical and Computer Engineering; Director CyLab Biometrics Center - Ph.D., Carnegie Mellon University; Carnegie Mellon, 2005-
- VYAS SEKAR, Tan Family Professor of Electrical and Computer Engineering - Ph.D., Carnegie Mellon University; Carnegie Mellon, 2013-
- JOHN SHEN, Distinguished Service Professor of Electrical and Computer Engineering - Ph.D., University of Southern California; Carnegie Mellon, 2015-
- ELAINE SHI, Associate Professor of Electrical and Computer Engineering and Computer Science - Ph.D., Carnegie Mellon University; Carnegie Mellon, 2020-
- MICHAEL SKIRPAN, Special Faculty Instructor for Electrical and Computer Engineering; Executive Director, Community Forge - Ph.D., Colorado University at Boulder; Carnegie Mellon, 2019-
- ASIM SMAILAGIC, Research Professor of Electrical and Computer Engineering - Ph.D., University of Sarajevo, Bosnia and Herzegovina; Carnegie Mellon, 1988-
- LEONARDO DA SILVA SOUSA, Assistant Teaching Professor of Electrical and Computer Engineering; Carnegie Mellon University Silicon Valley - Ph.D., Pontificia Universidade Católica do Rio de Janeiro; Carnegie Mellon, 2020-
- AKSHITHA SRIRAMAN, Assistant Professor of Electrical and Computer Engineering - Ph.D., University of Michigan; Carnegie Mellon, 2021-
- PETER STEENKISTE, Professor of Electrical and Computer Engineering and Computer Science - Ph.D., Stanford University; Carnegie Mellon, 1987-
- RICHARD STERN, Professor of Electrical and Computer Engineering; Language Technologies Institute, Computer Science, and BioMedical Engineering; Lecturer Music - Ph.D., Massachusetts Institute of Technology; Carnegie Mellon, 1977-
- THOMAS SULLIVAN, Teaching Professor of Electrical and Computer Engineering; Lecturer Music - Ph.D., Carnegie Mellon University; Carnegie Mellon, 1996-
- OZAN TONGUZ, Professor of Electrical and Computer Engineering - Ph.D., Rutgers University; Carnegie Mellon, 2000-
- ELIAS TOWE, Professor of Electrical and Computer Engineering; Grobstein Professor of Materials Science and Engineering - Ph.D., Massachusetts Institute of Technology; Carnegie Mellon, 2001-
- RAFAL WLODARSKI, Assistant Teaching Professor of Electrical and Computer Engineering; Carnegie Mellon University Silicon Valley - Ph.D., Lodz University of Technology, Poland; Carnegie Mellon, 2022-
- OSMAN YAĞAN, Associate Research Professor of Electrical and Computer Engineering - Ph.D., University of Maryland at College Park; Carnegie Mellon, 2013-
- ZIAD YOUSSEFI, Associate Professor of Electrical and Computer Engineering - Ph.D., Michigan State University; Carnegie Mellon, 2022-
- BYRON YU, Professor of Electrical and Computer Engineering; Gerard G. Elia Career Development Professor of Biomedical Engineering - Ph.D., Stanford University; Carnegie Mellon, 2009-
- TOM ZAJDEL, Assistant Teaching Professor of Electrical and Computer Engineering - Ph.D., University of California at Berkeley; Carnegie Mellon, 2021-
- XU ZHANG, Assistant Professor of Electrical and Computer Engineering - Ph.D., Massachusetts Institute of Technology; Carnegie Mellon, 2019-
- SIYANG ZHENG, Professor of Electrical and Computer Engineering and Biomedical Engineering - Ph.D., California Institute of Technology; Carnegie Mellon, 2019-
- JIMMY (JIAN-GANG) ZHU, ABB Professor of Electrical and Computer Engineering; Director DSSC; Professor of Materials Science and Engineering - Ph.D., University of California at San Diego; Carnegie Mellon, 1997-

Courtesy

- YURVRAJ AGARWAL, Assistant Professor of Computer Science; Courtesy Faculty of Electrical and Computer Engineering - Ph.D., University of California at San Diego; Carnegie Mellon, 2013-
- BURCU AKINCI, Paul Christiano Professor and Department Head, Civil and Environmental Engineering; Courtesy Faculty of Electrical and Computer Engineering - Ph.D., Stanford University; Carnegie Mellon, 2022-
- NATHAN BECKMANN, Associate Professor of Computer Science; Courtesy Faculty of Electrical and Computer Engineering - Ph.D., Massachusetts Institute of Technology; Carnegie Mellon, 2017-
- SARAH BERGBREITER, Professor of Mechanical Engineering; Courtesy Faculty of Electrical and Computer Engineering - Ph.D., University of California at Berkeley; Carnegie Mellon, 2018-
- MARIO BERGES, Assistant Professor of Civil and Environmental Engineering; Courtesy Faculty of Electrical and Computer Engineering - Ph.D., Carnegie Mellon University; Carnegie Mellon, 2017-
- TIMOTHY X. BROWN, Distinguished Service Professor of Engineering and Public Policy, Director of Academics Carnegie Mellon University Africa; Courtesy Faculty of Electrical and Computer Engineering - Ph.D., California Institute of Technology; Carnegie Mellon, 2013-
- KATHLEEN CARLEY, Professor of Computer Science and Institute for Software Research; Courtesy Faculty of Electrical and Computer Engineering - Ph.D., Harvard University; Carnegie Mellon, 2011-
- STEVE CHASE, Professor of BioMedical Engineering and Center for the Neural Basis of Cognition, Dietrich College Humanities and Social Sciences; Courtesy Faculty of Electrical and Computer Engineering - Ph.D., John Hopkins University; Carnegie Mellon, 2012-
- NICOLAS CHRISTIN, Professor of Computer Science (Software and Societal Systems Department) and Engineering & Public Policy; Courtesy Faculty of Electrical and Computer Engineering - Ph.D., University of Virginia; Carnegie Mellon, 2005-
- LORRIE FAITH CRANOR, Associate Department Head and FORE Systems Professor of Engineering and Public Policy; Director CyLab Usable Privacy and Security Laboratory; Courtesy Faculty of Electrical and Computer Engineering - Ph.D., Washington University; Carnegie Mellon, 2008-
- JOHN DOLAN, Senior Systems Scientist of Robotics Institute; Courtesy Faculty of Electrical and Computer Engineering - Ph.D., Carnegie Mellon University; Carnegie Mellon, 2006-
- KATHERINE FLANIGAN, Assistant Professor of Civil and Environmental Engineering; Courtesy Faculty of Electrical and Computer Engineering - Ph.D., University of Michigan; Carnegie Mellon, 2020-
- MATT FREDRICKSON, Assistant Professor of Institute of Software Research; Courtesy Faculty of Electrical and Computer Engineering - Ph.D., University of Wisconsin-Madison; Carnegie Mellon, 2016-
- IOANNIS GKIOULEKAS, Assistant Professor of Robotics Institute; Courtesy Faculty of Electrical and Computer Engineering - Ph.D., Harvard University; Carnegie Mellon, 2017-

BIN HE, Trustee Professor of Biomedical Engineering; Courtesy Faculty of Electrical and Computer Engineering – Ph.D., Tokyo Institute of Technology; Carnegie Mellon, 2018–

FARNAM JAHANIAN, President of Carnegie Mellon University; Courtesy Faculty of Electrical and Computer Engineering – Ph.D., University of Texas at Austin; Carnegie Mellon, 2014–

B. REEJA JAYAN, Assistant Professor of Mechanical Engineering; Courtesy Faculty of Electrical and Computer Engineering – Ph.D., University of Texas at Austin; Carnegie Mellon, 2015–

AARON JOHNSON, Assistant Professor of Mechanical Engineering; Courtesy Faculty of Electrical and Computer Engineering – Ph.D., University of Pennsylvania; Carnegie Mellon, 2014–

JANA KAINERSTORFER, Assistant Professor of Biomedical Engineering; Courtesy Faculty of Electrical and Computer Engineering – Ph.D., University of Vienna/NIH; Carnegie Mellon, 2015–

SHAWN KELLY, Senior Systems Scientist of Engineering Research Accelerator; Courtesy Faculty of Electrical and Computer Engineering – Ph.D., Massachusetts Institute of Technology; Carnegie Mellon, 2012–

KRIS KITANI, Assistant Research Professor of Robotics Institute; Courtesy Faculty of Electrical and Computer Engineering – Ph.D., University of Tokyo; Carnegie Mellon, 2011–

ZICO KOLTER, Assistant Professor of Computer Science; Courtesy Faculty of Electrical and Computer Engineering – Ph.D., Stanford University; Carnegie Mellon, 2012–

DAVE LAUGHLIN, ALCOA Professor of Materials Science Engineering; Courtesy Faculty of Electrical and Computer Engineering – Ph.D., Massachusetts Institute of Technology; Carnegie Mellon, 1974–

PHILIP LEDUC, William J. Brown Professor of Mechanical Engineering; Courtesy Faculty of Electrical and Computer Engineering – Ph.D., Johns Hopkins University; Carnegie Mellon, 2002–

CHANGLIE LIU, Assistant Professor of Robotics Institute; Courtesy Faculty of Electrical and Computer Engineering – Ph.D., University of California at Berkeley; Carnegie Mellon, 2019–

SARA MAJETICH, Professor of Physics; Courtesy Faculty of Electrical and Computer Engineering; Affiliated Faculty DSSC – Ph.D., University of Georgia; Carnegie Mellon, 2010–

CARMEL MAJIDI, Clarence H. Adamson Associate Professor of Mechanical Engineering; Courtesy Faculty of Electrical and Computer Engineering – Ph.D., University of California at Berkeley; Carnegie Mellon, 2011–

ZACHARY MANCHESTER, Assistant Professor of Robotics Institute; Courtesy Faculty of Electrical and Computer Engineering – Ph.D., Cornell University; Carnegie Mellon, 2020–

FLORIAN METZE, Associate Research Professor of Computer Science; Courtesy Faculty of Electrical and Computer Engineering – Ph.D., Dr.-Ing., Fakultät für Informatik der Universität Karlsruhe, Germany; Carnegie Mellon, 2009–

TODD MOWRY, Professor of Computer Science; Courtesy Faculty of Electrical and Computer Engineering; – Ph.D., Stanford University; Carnegie Mellon, 1997–

SRINIVASA NARASIMHAN, Associate Professor of Robotics Institute; Courtesy Faculty of Electrical and Computer Engineering – Ph.D., Columbia University; Carnegie Mellon, 2016–

MATTHEW O'TOOLE, Assistant Professor of Computer Science; Courtesy Faculty of Electrical and Computer Engineering – Ph.D., University of Toronto; Carnegie Mellon, 2018–

CORINA PASAREANU, Senior Research Scientist, Carnegie Mellon University Silicon Valley; Courtesy Faculty of Electrical and Computer Engineering – Ph.D., Kansas State University; Carnegie Mellon, 2015–

JON M. PEHA, Professor of Engineering and Public Policy; Courtesy Faculty of Electrical and Computer Engineering – Ph.D., Stanford University; Carnegie Mellon, 1991–

ANDRE PLATZER, Associate Professor of Computer Science; Courtesy Faculty of Electrical and Computer Engineering – Ph.D., University of Oldenburg, Germany; Carnegie Mellon, 2010–

SEAN QIAN, Henry Posner, Anne Molloy, and Robert and Christine Pietrandrea Associate Professor of Civil and Environmental Engineering; Courtesy Faculty of Electrical and Computer Engineering – Ph.D., University of California at Davis; Carnegie Mellon, 2014–

BHIKSHA RAJ RAMAKRISHNAN, Professor of Language Technologies Institute; Courtesy Faculty of Electrical and Computer Engineering – Ph.D., Carnegie Mellon University; Carnegie Mellon, 2009–

RAJ REDDY, Mozah Bint Nasser University Professor of Computer Science; Courtesy Faculty of Electrical and Computer Engineering – Ph.D., Stanford University; Carnegie Mellon, 2000–

MAJD SAKR, Teaching Professor of Computer Science; Courtesy Faculty of Electrical and Computer Engineering – Ph.D., University of Pittsburgh; Carnegie Mellon, 20015–

MAHADEV SATYANARAYANAN, Carnegie Professor of Computer Science; Courtesy Faculty of Electrical and Computer Engineering – Ph.D., Carnegie Mellon University; Carnegie Mellon, 1983–

SEBASTIAN SCHERER, Associate Research Professor of Robotics Institute; Courtesy Faculty of Electrical and Computer Engineering – Ph.D., Carnegie Mellon University; Carnegie Mellon, 2019–

JEFF SCHNEIDER, Research Professor of Robotics Institute; Courtesy Faculty of Electrical and Computer Engineering – Ph.D., University of Rochester; Carnegie Mellon, 2013–

SRINIVASAN SESHAN, Associate Professor of Computer Science; Courtesy Faculty of Electrical and Computer Engineering – Ph.D., University of California at Berkeley; Carnegie Mellon, 2000–

NIHAR SHAH, Assistant Professor of Machine Learning; Courtesy Faculty of Electrical and Computer Engineering – Ph.D., University of California at Berkeley; Carnegie Mellon, 2017–

SHENG SHEN, Professor of Mechanical Engineering; Courtesy Faculty of Electrical and Computer Engineering – Ph.D., Massachusetts Institute of Technology; Carnegie Mellon, 2011–

JUSTINE SHERRY, Assistant Professor of Computer Science; Courtesy Faculty of Electrical and Computer Engineering – Ph.D., University of California at Berkeley; Carnegie Mellon, 2017–

BARBARA SHINN-CUNNIGHAM, Professor of Auditory Neuroscience of Biomedical Engineering; Courtesy Faculty of Electrical and Computer Engineering – Ph.D., Massachusetts Institute of Technology; Carnegie Mellon, 2018–

RAMTEEN SIOSHANSI, Professor of Engineering and Public Policy; Director of the Carnegie Mellon Electricity Industry Center; Courtesy Faculty of Electrical and Computer Engineering – Ph.D., University of California at Berkeley; Carnegie Mellon, 2023–

MARVIN A. SIRBU, Professor of Engineering and Public Policy; Courtesy Faculty of Electrical and Computer Engineering – Ph.D., Massachusetts Institute of Technology; Carnegie Mellon, 1985–

DIMITRIOS SKARLATOS, Assistant Professor of Computer Science; Courtesy Faculty of Electrical and Computer Engineering – Ph.D., University of Illinois at Urbana-Champaign; Carnegie Mellon, 2020–

VIRGINIA SMITH, Assistant Professor of Machine Learning; Courtesy Faculty of Electrical and Computer Engineering – Ph.D., University of California at Berkeley; Carnegie Mellon, 2018–

PATRICK TAGUE, Associate Director of the INI; Courtesy Faculty of Electrical and Computer Engineering; Carnegie Mellon University Silicon Valley – Ph.D., University of Washington; Carnegie Mellon, 2009–

REBECCA TAYLOR, Assistant Professor of Mechanical Engineering; Courtesy Faculty of Electrical and Computer Engineering – Ph.D., Stanford University; Carnegie Mellon, 2016–

SRIDHAR TAYUR, Professor of Tepper School of Business; Courtesy Faculty of Electrical and Computer Engineering – Ph.D., Cornell University; Carnegie Mellon, 2017–

RASHMI VINAYAK, Assistant Professor of Computer Science; Courtesy Faculty of Electrical and Computer Engineering – Ph.D., University of California at Berkeley; Carnegie Mellon, 2017–

WEINA WANG, Assistant Professor of Computer Science; Courtesy Faculty of Electrical and Computer Engineering – Ph.D., Arizona State University; Carnegie Mellon, 2018–

SHINJI WATANABE, Associate Professor of Language Technologies Institute; Courtesy Professor, Electrical and Computer Engineering – Ph.D., Waseda University, Tokyo, Japan; Carnegie Mellon, 2020–

SOSENA WOOD, Presidential Post-Doctoral Fellow of Biomedical Engineering; Courtesy Faculty of Electrical and Computer Engineering – Ph.D., University of Pittsburgh; Carnegie Mellon, 2022–