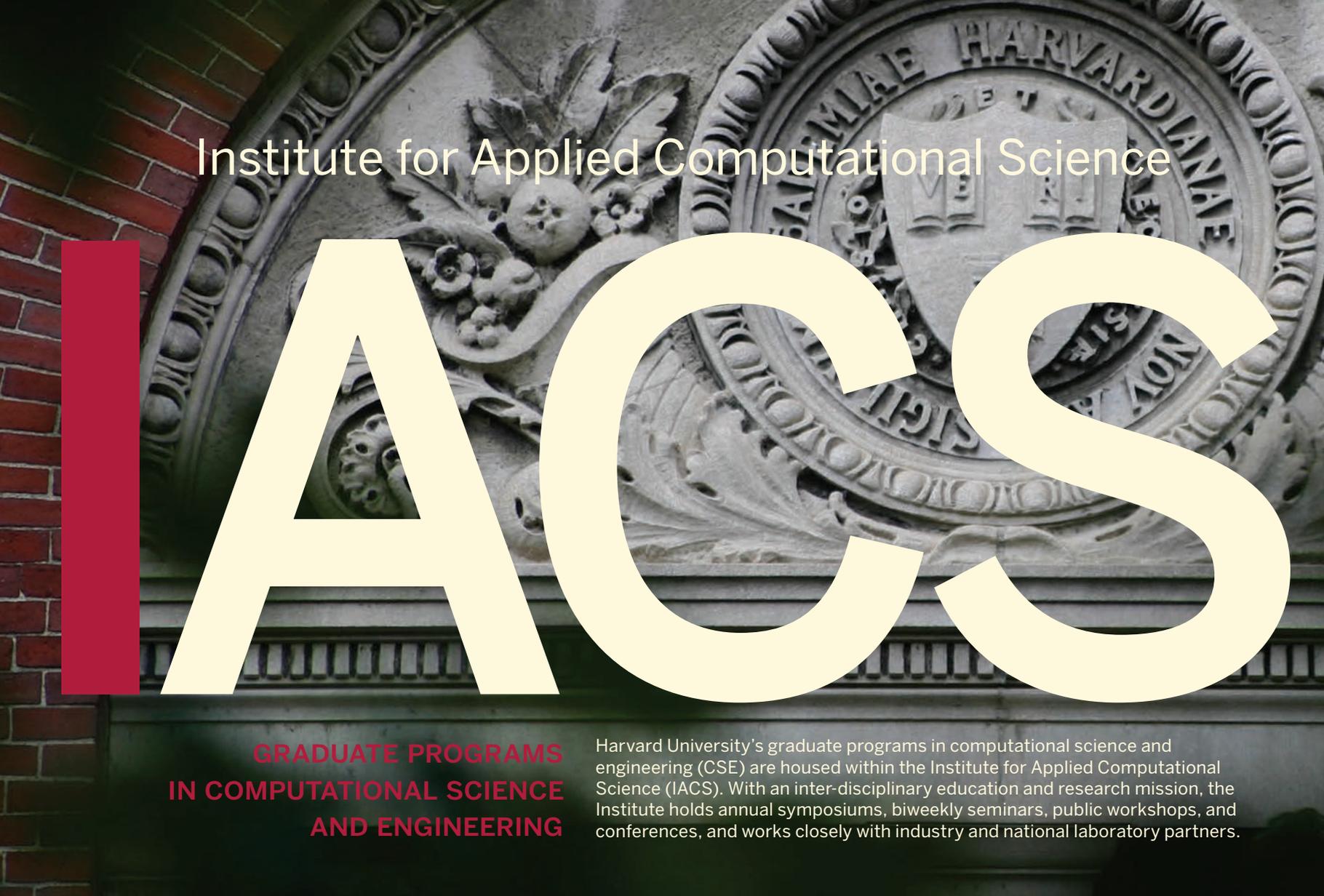


POWERING
21ST CENTURY
DISCOVERY AND
INNOVATION

COMPUTATIONAL SCIENCE
AND ENGINEERING AT
HARVARD UNIVERSITY

The background of the image features a detailed stone relief of the Harvard University seal, which includes a shield with an open book and a crest with a bent arm holding a sword. The seal is surrounded by Latin text: "SIGILLUM UNIVERSITATIS HARVARDIANAE" and "FUNDATAE 1636".

Institute for Applied Computational Science

A solid red vertical bar is positioned on the left side of the page, partially overlapping the large 'A' in the acronym.

AACS

**GRADUATE PROGRAMS
IN COMPUTATIONAL SCIENCE
AND ENGINEERING**

Harvard University's graduate programs in computational science and engineering (CSE) are housed within the Institute for Applied Computational Science (IACS). With an inter-disciplinary education and research mission, the Institute holds annual symposiums, biweekly seminars, public workshops, and conferences, and works closely with industry and national laboratory partners.

A man with short brown hair, wearing a blue and white striped button-down shirt, is smiling broadly and waving his right hand. The background is dark. An orange rectangular box is overlaid on the image, containing text about learning outcomes.

You'll focus on learning outcomes

The CSE curriculum is based on learning outcomes articulated in expert discussions with academic and industry leaders about what knowledge and capabilities will empower future leaders in the field. When you complete the CSE program, you will be able to:

- » Frame a real-world problem such that it can be addressed computationally
- » Evaluate multiple computational approaches to a problem and choose the most appropriate one
- » Produce a computational solution to a problem that can be comprehended and used by others
- » Communicate across disciplines
- » Collaborate within teams
- » Model systems appropriately with consideration of efficiency, cost, and the available data
- » Use computation for reproducible data analysis
- » Leverage parallel and distributed computing
- » Build software and computational artifacts that are robust, reliable, and maintainable
- » Enable a breakthrough in a domain of inquiry

You'll get a rigorous **foundational education** with the flexibility to pursue your interests

A CORE CURRICULUM, equally balanced between computer science, applied math, and statistics, will teach you tools for parallel programming, stochastic optimization, and numerical modeling. This training, combined with the flexibility to explore elective topics ranging from machine learning and visualization to computational economics or computational biology, will equip you to solve problems in whatever arena you choose to work in. In addition, our project-based courses will give you practical experience in collaborative problem solving.

GRADUATE PROGRAMS IN COMPUTATIONAL SCIENCE AND ENGINEERING

Master of Science

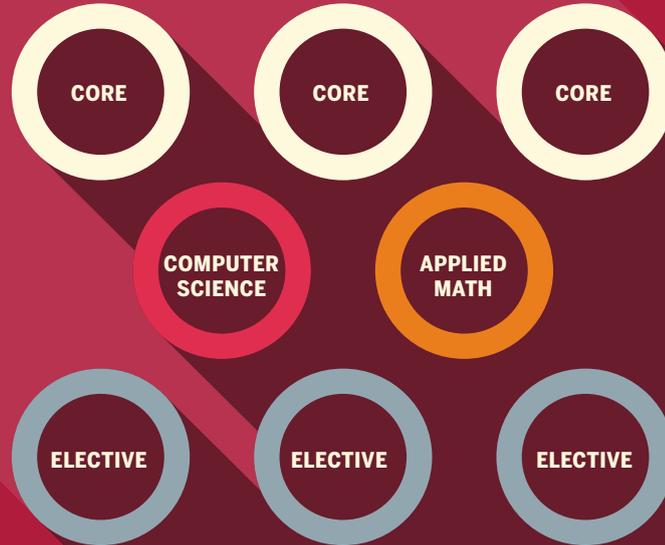
Eight courses, usually over two semesters

Master of Engineering

Eight courses, plus one year of research leading to a master's thesis

Secondary Field

Four courses, open to all Harvard Ph.D. students.



COURSEWORK

3 CORE COURSES

1 COURSE IN COMPUTER SCIENCE

1 COURSE IN APPLIED MATH

3 ELECTIVES

You'll be a part of a small cohort of students from a wide variety of academic backgrounds

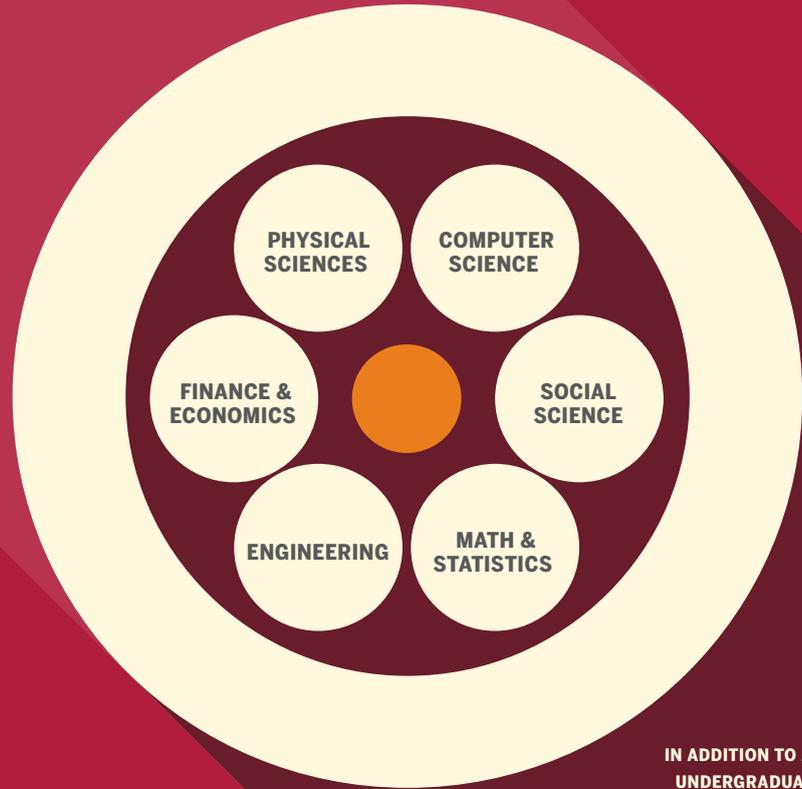
OUR STUDENTS come from a variety of academic backgrounds and arrive here with a wide range of previous work and life experience. Because the program is within an engineering school embedded in a liberal arts University, you will have the opportunity both within and outside of the classroom to interact with other Harvard students ranging from doctoral candidates to advanced undergraduates.

You will also be part of Harvard's vibrant collaborative environment, with access to opportunities at Harvard's other schools, including Harvard Business School, the Kennedy School of Government, and Harvard Medical School, and at a wide range of other centers and institutes on campus such as the Institute for Quantitative Social Science and the Harvard Innovation Lab.



I FOUND THE CSE CURRICULUM TO BE EXTREMELY CHALLENGING—IN A GOOD WAY! I'M LOOKING FORWARD TO SOME TIME OFF, BUT I'VE LEARNED A TREMENDOUS AMOUNT IN MY TIME HERE AND WOULD CERTAINLY DO IT AGAIN.

2015 GRADUATE



IN ADDITION TO A VARIETY OF UNDERGRADUATE MAJORS, CSE STUDENTS HAVE HELD GRADUATE DEGREES IN

**LAW, BUSINESS,
SCIENCE AND
MEDICINE.**

You'll develop
connections to industry
at companies across
the nation.

YOU'LL WORK work on real-world hands-on projects with industry and government partners, and gain the opportunity to network and learn with potential employers who are part of the robust technology sector in Greater Boston. Through the IACS Seminar Series, you'll meet speakers from industry working on cutting-edge research, and have the chance to meet in person with companies in Boston, NYC, and Silicon Valley through our student Tech Trek visits.



THE GREAT THING ABOUT THE CSE PROGRAM IS THAT THE CLASSES ARE PROVIDING US WITH THE RIGHT TOOLS TO ATTACK PROBLEMS THAT DATA SCIENTISTS LIKE US ARE GOING TO SEE IN THE REAL WORLD. THE PROGRAMMING ASSIGNMENTS INVARIABLY PUSH ME TO MY LIMITS BUT ARE FEASIBLE. I AM IMPRESSED WITH MYSELF, BECAUSE I HAVE ACCOMPLISHED MORE THAN I KNEW I WAS CAPABLE OF.

2014 GRADUATE



IACS HAS A
RELATIONSHIP WITH

68

COMPANIES
ACROSS THE COUNTRY

You'll enter a
dynamic sector
with cutting-edge skills
and experience.

YOU'LL BE PART of the next generation of leaders who will understand the complexities of technology and society to meet the challenges of the 21st century. CSE graduates go on to work across a variety of industry sectors or choose to pursue further studies at leading graduate business or doctoral programs.

GRADUATES HAVE PLACED AT:

Technology

Microsoft, Intel, Dropbox, Uber,
Common Crawl, Kyruus, 1010data

Government/Military

Coast Guard, Navy, MIT Lincoln Labs

investment/Financial

Goldman Sachs, Bloomberg, Citadel LLC,
The Blackstone Group, The Thasos Group

Advertising/Marketing

Integral Ad Science, ADP, Intent Media,
YieldMo, Tribe Dynamics, LiveRamp

Media

Buzzfeed, Legendary Entertainment

Consulting

Booz, Allen, Hamilton

TECHNOLOGY

GOVERNMENT/MILITARY

INVESTMENT/FINANCIAL

ADVERTISING/MARKETING

MEDIA

CONSULTING

TYPICAL JOB TITLES:

- » DATA SCIENTIST
- » SOFTWARE ENGINEER
- » PRODUCT MANAGER
- » DATA ANALYST
- » QUANTITATIVE STRATEGIST

HARVARD

JOHN A. PAULSON
SCHOOL OF ENGINEERING
AND APPLIED SCIENCES



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617-496-2599

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gsas.harvard.edu/apply

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