The University of Texas at Austin
Computer Science
College of Natural Sciences

COMPUTER SCIENCE

"I mentioned the noncompetitive spirit explicitly, because these days, excellence is a fashionable concept. But excellence is a competitive notion, and that is not what we are heading for: **we are heading for perfection.**"

EDSGER W. DIJKSTRA,
PROFESSOR
UT COMPUTER SCIENCE

There are few academic disciplines that have impacted our world more dramatically than computer science. It has changed everything from the way we practice medicine to how we do business. It has reshaped the movies we watch, the cars we drive, and the ways we communicate. Studying at The University of Texas at Austin means being at the forefront of these innovations in an academic institution that offers **internationally respected research, a rigorous curriculum, unparalleled career opportunities, and a remarkable community** that will shape not only your academic experience but your very perspective on the world.

DEPARTMENT

TOP-TEN
COMPUTER SCIENCE PROGRAM
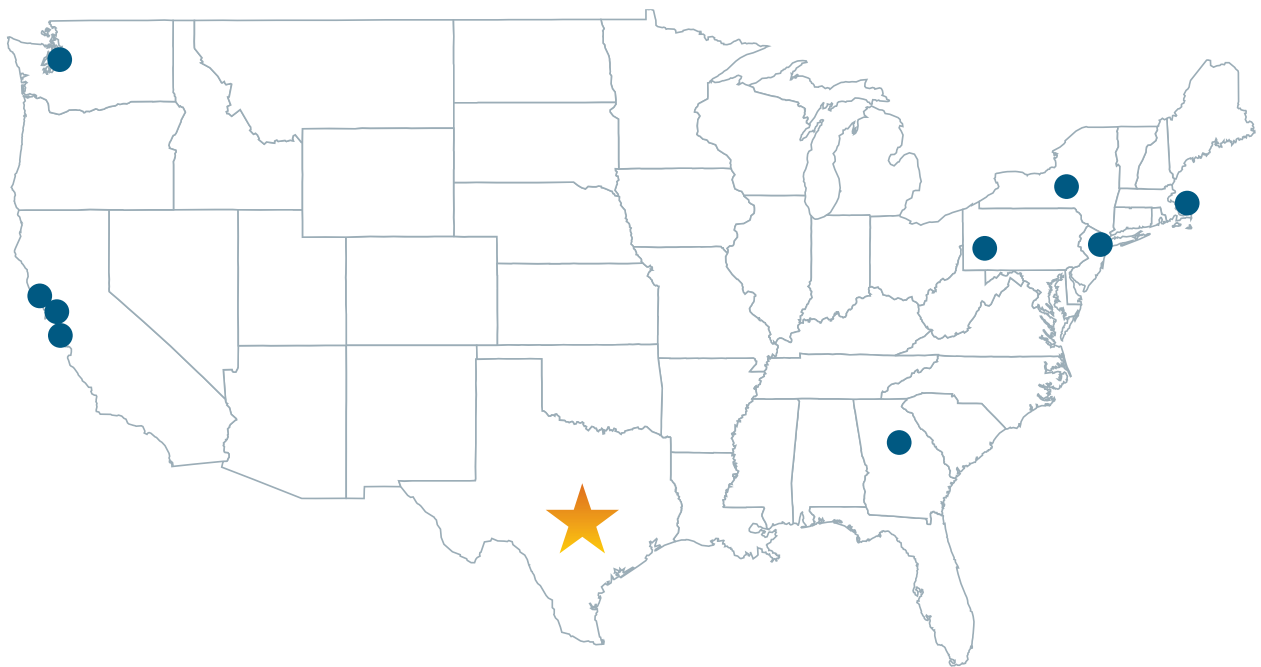
#10 **UNDERGRAD PROGRAM**
US News & World Report, 2022

#9 **GRADUATE PROGRAM**
US News & World Report, 2023

FACTS

DEPARTMENT ESTABLISHED

SEPTEMBER
9
1969

3,772
UNDERGRAD + GRADUATE STUDENTS

72 FULL-TIME, TENURED, TENURE-TRACK, AND PROFESSIONAL FACULTY

STUDENTS FROM

46 STATES

79 COUNTRIES

210+ COMPANIES ACTIVELY ENGAGED IN ON-CAMPUS RECRUITING OF CS STUDENTS

CLUBS AND ORGANIZATIONS

Computer Science is part of the College of Natural Sciences, which is home to **50+ student organizations**. UT has more than **1,000 active student organizations.**

FACILITIES

BILL & MELINDA GATES COMPUTER SCIENCE COMPLEX AND DELL COMPUTER SCIENCE HALL

Situated in the center of campus, The Bill & Melinda Gates Computer Science Complex is the state-of-the-art home of the Department of Computer Science.

The complex comprises nearly 24,000 square feet of instructional space and 20,000 square feet for research, including ten research clusters with glass-walled laboratories surrounded by offices and discussion areas. All of this is housed in the Dell Computer Science Hall as well as a large wing to the south. The two buildings are connected by an atrium that makes up the social center of the complex, including study lounges and outdoor terraces in which students and faculty can relax and recharge.

- **3** computer labs
- **200-seat** lecture hall
- **7** classrooms
- **Electronic seminar rooms** and instructional laboratories
- **Dedicated study areas** for undergraduates and graduate students
- **Over 24** discussion areas
- **8** conference rooms
- **Student organization offices**
- **Spaces** to encourage interaction and collaboration

ANNA HISS GYMNASIUM

The Anna Hiss Gymnasium serves as a hub of robotics activity on campus. Originally opened in 1931, the 55,000-square-foot historic Anna Hiss Gymnasium was fully renovated in 2021 as a state-of-the-art research facility and the new home of Texas Robotics, right in the heart of campus.

The Anna Hiss Gymnasium (AHG) includes multiple robotics laboratories and several large, open laboratory spaces that can be configured as needed. Additionally, fleets of deployed robots operate in the building for research into the practical applications of robots and long-term autonomy.

AHG also has a set of four modern fabrication facilities that enable Texas Robotics to rapidly prototype, iteratively design, and fully implement novel robotics hardware at the high bandwidth necessary to facilitate our research.

A FEW AHG LABORATORIES

- **1,200-square-foot** motion capture studio
- **Simulated apartment** for service robotics research
- **Simulated operating room** for surgical robots
- **Heavy robotics bay** for researching robots operating in hazardous environments
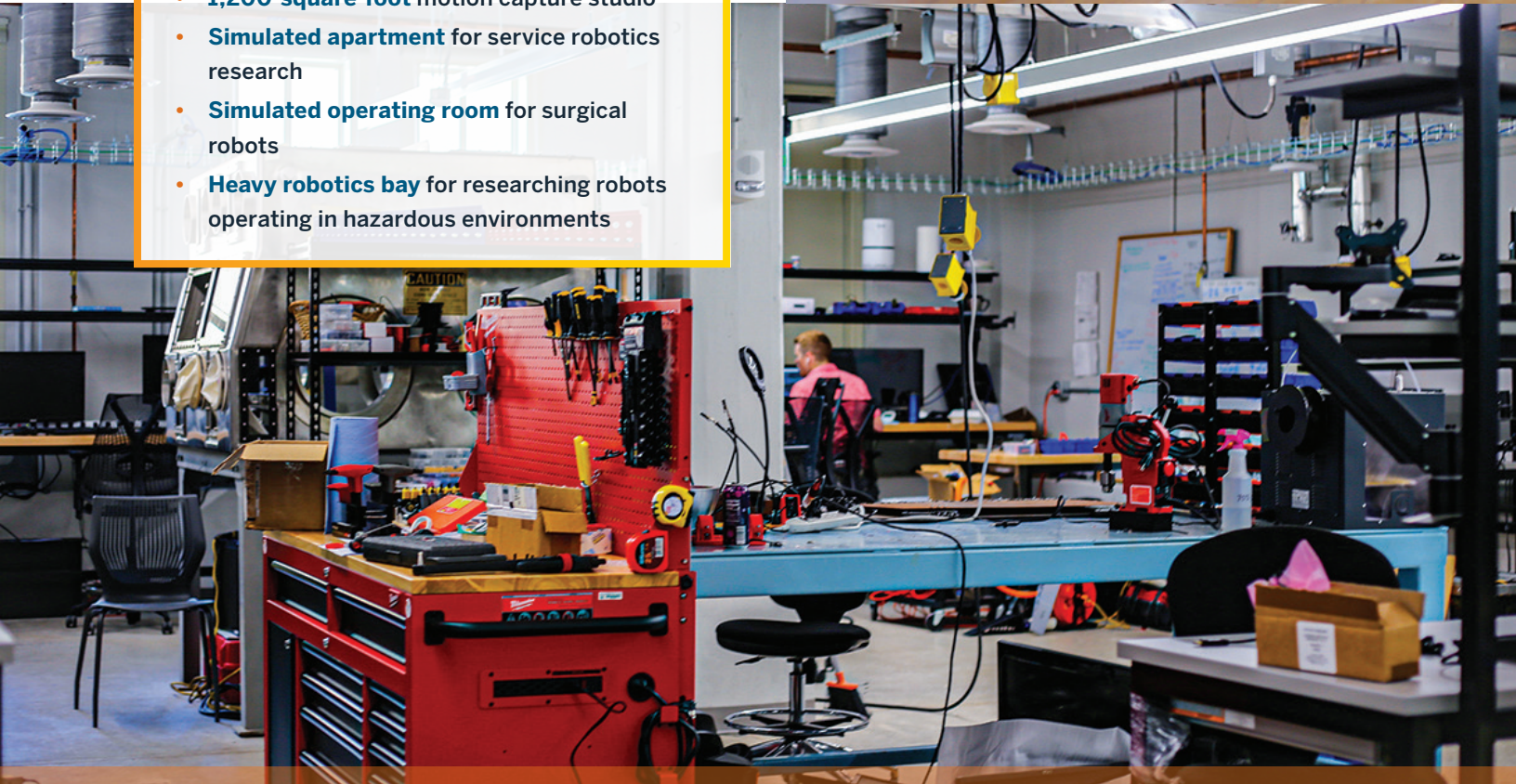
UNDERGRAD PROGRAM

UT Computer Science offers four undergraduate degrees to prepare students to work in industry or go on to graduate school. On top of their core studies with world-class faculty, our undergraduate students have the opportunity to participate in research programs, extracurricular organizations, and all of the community and culture the campus and surrounding city have to offer.
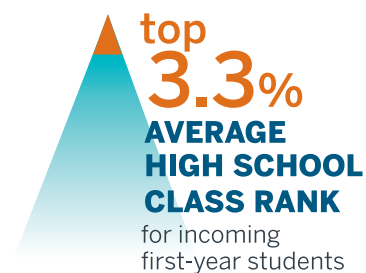
UNDERGRADUATE PROGRAM BY THE NUMBERS

1,957
UNDERGRADUATE STUDENTS
total class, fall 2021

484
INCOMING STUDENTS
fall 2022
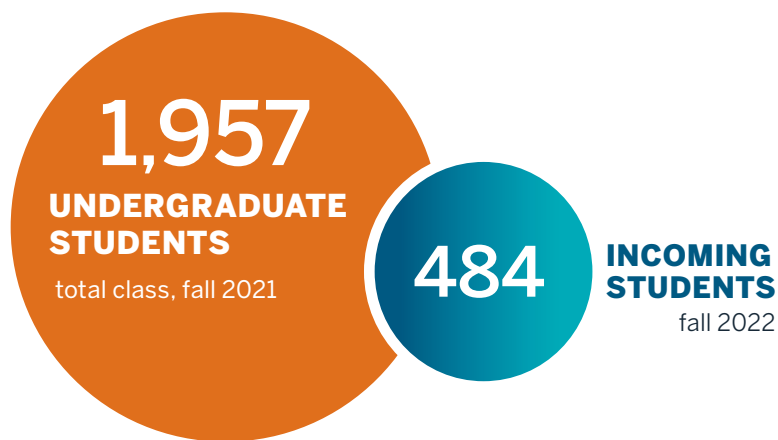
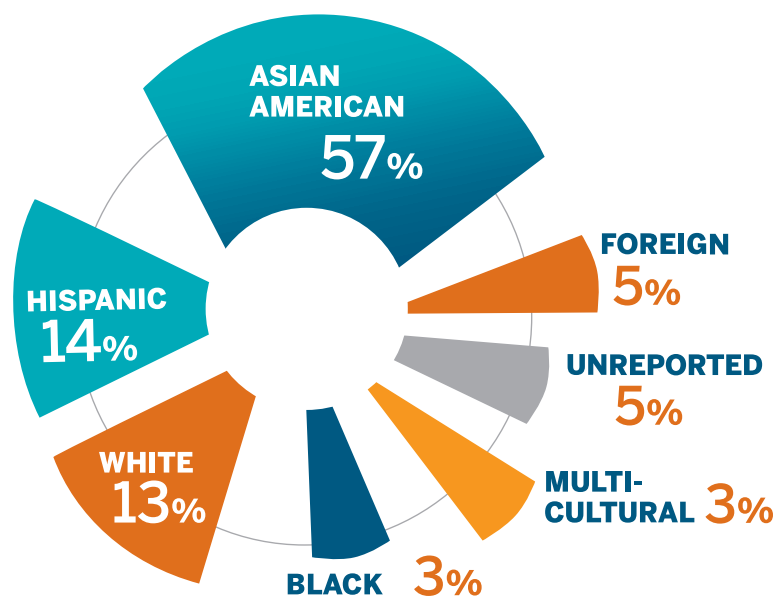### UNDERGRAD PROGRAM RANKINGS
US News & World Report, 2022

- **10TH** Undergrad program in CS overall
- **6TH** in Programming Languages
- **6TH** in Software Engineering
- **9TH** in Artificial Intelligence
- **9TH** in Computer Systems
- **10TH** in Theory

146
DEPARTMENT SCHOLARSHIPS
'21/'22 academic year

top 3.3%
AVERAGE HIGH SCHOOL CLASS RANK
for incoming first-year students

UATE

ETHNICITY
incoming, fall 2022

- ASIAN AMERICAN 57%
- HISPANIC 14%
- WHITE 13%
- BLACK 3%
- MULTI-CULTURAL 3%
- UNREPORTED 5%
- FOREIGN 5%
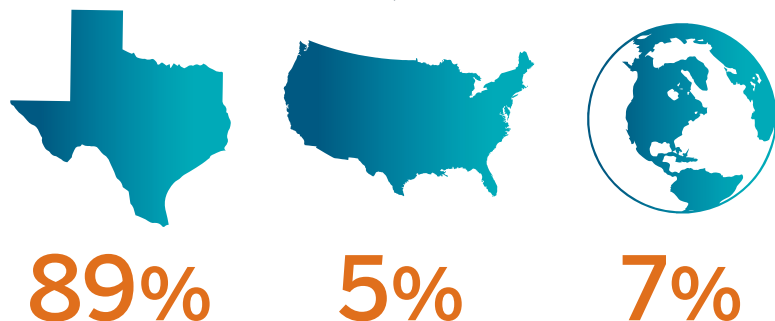
79
FIRST GENERATION STUDENTS

85
PELL ELIGIBLE STUDENTS

incoming, fall 2022

WHERE OUR UNDERGRADUATE STUDENTS COME FROM
enrolled, fall 2021

89%   5%   7%

GENDER
incoming, fall 2022

33%   67%

Fall 2022 undergraduate data based on enrollment deposits as of May 1, 2022.
Demographic categories as provided by UT.

7
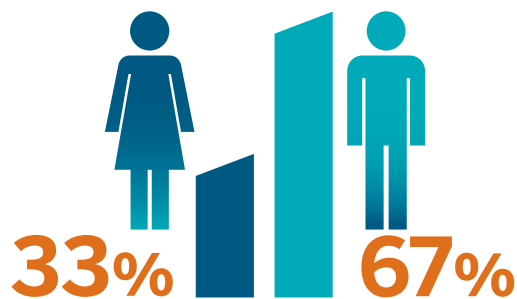
UNDERGRADUATE CURRICULUM

The rigorous educational experience at UT Computer Science includes more than 65 courses students can pursue, spanning the full spectrum of topics in modern computer science. All students will develop a strong background in architecture and mathematics as a foundation on which to build their computing education.

Required computer science courses cover three tracks: programming, theory, and systems. Required and elective courses offer a base of knowledge in a wide variety of the computer sciences: software development, artificial intelligence, networks, theory, architecture, graphics, systems, gaming, and mobile computing.

Students will typically choose one of the following two options when pursuing a computer science degree.

B.S. The bachelor of science requires more mathematics, science, and computer science than does the B.S.A.

B.S.A. The bachelor of science and arts includes a built-in minor or certificate and broader liberal arts and humanities choices than the B.S.

COMPUTER SCIENCE CONCENTRATIONS

Computer science majors may select one of six concentrations designed to offer a structured set of elective courses around an organized theme without increasing time to degree completion.

BIG DATA

Students in the big data concentration will study advanced computational and analytic tools such as machine learning, large-scale optimization, data analytics, data storage, and data-intensive computing, as well as modern interdisciplinary applications of big data in industries as diverse as healthcare, transportation, energy, and finance.

COMPUTER SYSTEMS

The computer systems concentration allows students to develop expertise in operating systems, distributed systems, networks, and security. These skill sets support a wide array of applications and technologies, such as cloud computing, virtual machine technology, network and systems reliability, and the Internet of Things.

CYBERSECURITY

The cybersecurity concentration is available to students who want to study cybersecurity and privacy. Students will receive instruction on a wide range of cybersecurity related topics, like network security and cryptography.

GAME DEVELOPMENT

Game development is an inherently interdisciplinary field, which is why Computer Science, Fine Arts, and Radio-Television-Film have jointly developed the world-class Game and Mobile Media Applications (GAMMA) program. Texas has the second-largest concentration of game studios in the US, and GAMMA students will take classes like computer graphics, game technology, and a project-based capstone course.

MACHINE LEARNING AND ARTIFICIAL INTELLIGENCE

This concentration is ideal for students who desire to learn how to program computer systems to "learn" from data and perform complex tasks normally associated with human-level intelligence. AI/ML includes topics such as computer vision, natural language processing, robotics, machine learning, deep learning, and knowledge acquisition and representation.

MOBILE COMPUTING

This concentration explores important topics in mobile computing, including Internet and wireless networks, mobile app development, cloud computing, and network security. Mobile computing has revolutionized the way we interact with the world, and these topics are applicable to a virtually endless array of industries.

SOCIAL IMPACT STAMP

The Stamp curriculum is designed to raise a student's critical consciousness—their understanding of how computer science intersects with the social forces that shape the world, their ability to identify potential for misuse of computer science to perpetuate social injustices, and their awareness of their agency to change those injustices. The knowledge gained from the Social Impact Stamp empowers graduates to guide development of future technology towards social good. The stamp can be earned alongside a technical concentration or independently.

UNDERGRADUATE SPECIALIZED ACADEMIC PROGRAMS

Students are encouraged to take advantage of specialized academic programs that empower them to explore and apply new skills beyond the standard curriculum. These innovative educational programs are designed to provide concrete experience for careers and to distinguish UT Computer Science graduates as the best of the best.

TURING SCHOLARS HONORS PROGRAM

The selective Turing Scholars Honors Program offers small class sizes, close interaction with faculty, and social activities with peers in other honors programs. All this along with all the perks of a larger research university, including exciting research, a variety of undergraduate and graduate courses, and ample opportunities for interdisciplinary studies and corporate internships. Undergraduate research, an important part of the Turing Program, allows students to explore in-depth new ideas in computing under the guidance of top-notch faculty, helping them develop valuable skills and relationships that serve as a springboard to graduate schools, corporate employment, or entrepreneurship.

TEXAS HONORS COMPUTER SCIENCE AND BUSINESS

Texas CSB is an integrated honors degree program between the Canfield Business Honors Program and the Department of Computer Science. This rigorous four-year undergraduate curriculum prepares students for top technology careers. Participants are part of a small cohort of like-minded honors-level students who are savvy in both business and tech. The challenging coursework gives students a solid understanding of all business disciplines and computer science concepts. In addition, they enjoy specific internship and recruiting opportunities that combine business with technology at top companies.

ELEMENTS OF COMPUTING

The Elements of Computing certificate is an eighteen-hour program intended to help students understand the sophisticated technologies they use every day and develop the skills that will serve them well in their chosen professions. The goals of the program are to provide students with knowledge of computer science that employers find valuable and support study in other disciplines requiring computational proficiency.
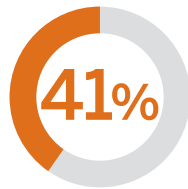
TURING HONORS PROGRAM
incoming, fall 2022

1,293
APPLICANTS

58
INCOMING STUDENTS

41%
ENROLLMENT
yield percentage, incoming class

8
VALEDICTORIANS

28%   72%
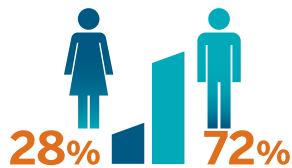
top **2%**
AVERAGE HIGH SCHOOL CLASS RANK

IN-STATE, OUT-OF-STATE, & INTERNATIONAL STUDENTS
by total numbers

62%   **33%**   **5%**

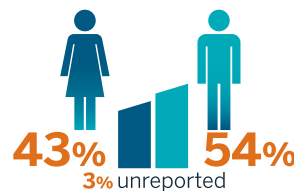## TEXAS HONORS COMPUTER SCIENCE & BUSINESS
incoming, fall 2022

504
APPLICANTS

37
INCOMING STUDENTS

51%
ENROLLMENT
yield percentage, incoming class

6
VALEDICTORIANS

43%   54%
3% unreported

top **1.2%**
AVERAGE HIGH SCHOOL CLASS RANK

IN-STATE, OUT-OF-STATE, & INTERNATIONAL STUDENTS
admitted students

95%   **3%**   **3%**

KEVIN QI
Senior Undergraduate Student

Kevin is a junior double majoring in CS Honors and Canfield Business Honors as a part of the Texas Computer Science and Business (CSB) program. On campus, Kevin serves as president of the Texas CSB student cohort and product lead for the Texas Product Engineering Organization, where he uses his dual-degree knowledge to build meaningful technology. Off-campus, Kevin enjoys using technology to benefit his community. During COVID-19, he led the creation of locoeats.org, a restaurant search engine that supports locally owned eateries and acquired over 3,000 users and 12,000 page visits. He has spent his summers in software engineering internships at both H-E-B and Salesforce. After graduation, Kevin hopes to work as a product manager in the tech industry, using technology and teamwork to solve complex problems.

BEYOND THE CLASSROOM

Beyond the classroom, students can enrich their educational experience by participating in the department's many student organizations, which span a wide array of topics and activities. Student life at UT Computer Science includes countless opportunities outside of the classroom to meet new people, volunteer, and explore personal and professional interests that will define the collegiate experience.

ENRICHMENT OPPORTUNITIES

The Freshman Research Initiative invites first-year students to initiate and engage in authentic research experiences in the sciences with support and mentorship by faculty and graduate students. The three-semester program gives students experimental techniques, lab experience, publications, faculty interaction, and a deep understanding of the scientific process.

The Friends of Computer Science (FoCS) program is a robust and comprehensive recruiting platform designed exclusively for CS students to interact, engage, and build relationships with top tech employers from across the country.

Longhorn Startup is a project-based course for student entrepreneurs who are building scalable technology companies while still in school. Students receive weekly mentoring from successful entrepreneurs, and the semester culminates in Demo Day, where the students present their companies to the Austin community.

Study abroad provides boundless opportunities for students to see the world in more than 80 countries. The university has agreements with hundreds of colleges and universities around the world so students can take core classes abroad and stay on track with their computer science degrees at home.

JALYN DERRY
Senior Undergraduate Student

After falling in love with computer science in high school, Jalyn was able to come to The University of Texas at Austin thanks to the 2019 Gates Scholarship and UT's IMPACT Scholarship. Since freshman year, she has been an active member of the Association of Black Computer Scientists, holding the corporate officer chair for two years and working to connect employers with Black computer science students. After interning at Google and Tableau, she decided to pursue a minor in Informatics and a certificate in Business Spanish, studied abroad in Barcelona, Spain, to increase fluency in Spanish so she can reach a larger audience. After graduation, she hopes to pursue a career in UX Design, where she can ensure that users from all different backgrounds can access, understand, and grow from the products she works on. Her motto is "A product is never complete until it is accessible to all users."

STUDENT ORGANIZATIONS

Association for Computing Machinery Student Chapter (ACM) is the oldest organization for students, academics, and professionals in the field of computer science.

Association of Black Computer Scientists (ABCS) seeks to create paths to educational and professional success in computer science for Black and other under-represented students.

CS Roadshow visits local schools to share information about computing and computing careers.

Computer Science and Business Association (CSBA) provides a community for UT's CS and Business Honors students to grow socially, professionally, and academically.

Electronic Game Developers Society (EGaDS!) is for students interested in computer and video game development.

Engineering and Computational Learning of Artificial Intelligence in Robotics (ECLAIR) advances innovation in robotics by exploring areas such as autonomy, reinforcement learning, and sim2real.

Freetail Hackers plans several hackathons each year, including HackTX, a 24-hour event for UT students to learn and explore technology.

Hispanic Association of Computer Scientists (HACS) empowers Hispanic students through opportunities to engage in leadership, networking, and mentoring with computer science peers, faculty, and professionals.

Information and Systems Security Society (ISSS) teaches students about security and privacy through talks, workshops, and Capture the Flag competitions.

Q++ empowers and provides support for students who identify as LGBTQIA+ in computer science and technology through academic, professional, mentorship, and social events.

TX Convergent fosters collaboration within a multi-disciplinary student body through hands-on projects, comprehensive education, and open-source philanthropic endeavors.

Turing Scholars Student Association (TSSA) is the student organization for students in the Turing Scholars Honors Program.

UTCS Ambassadors organize department visits for high school students interested in pursuing a UTCS degree.

UTCS Competitive Programming Club represents UT Austin at the ACM International Collegiate Programming Contest.

Women in Computer Science (WiCS) works to empower women in computer science and provide a supportive community to engage in both academic and social events.
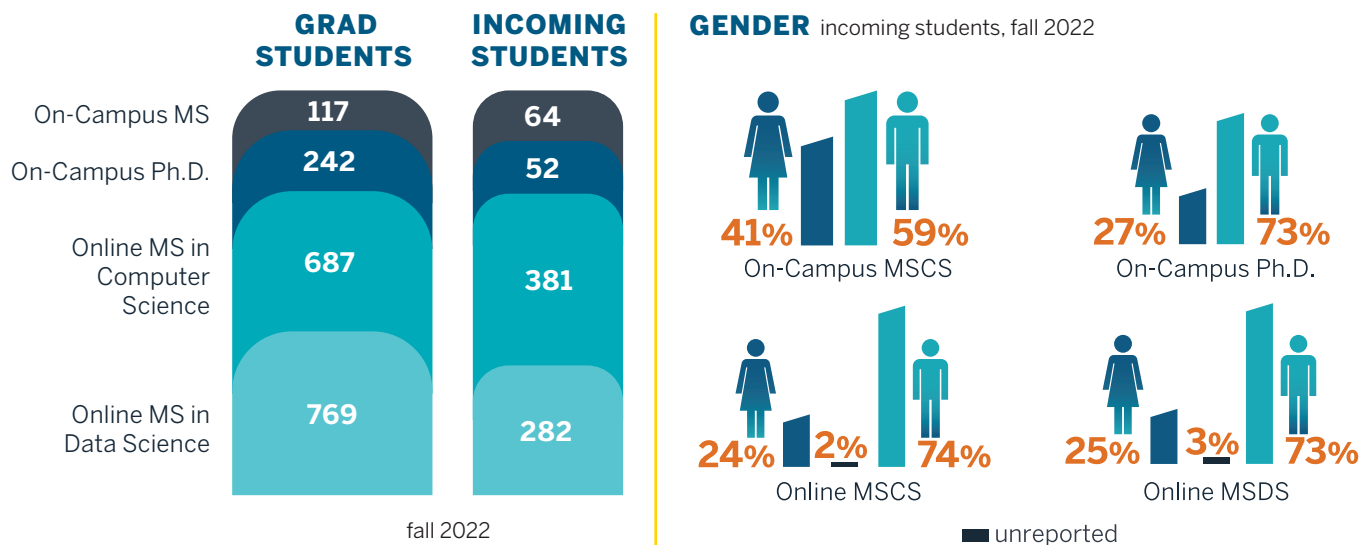
Texas Product Engineering Organization (TPEO) teaches students skills in software engineering, UI/UX design, and product management in order to build software products that solve real-world problems in the Austin community.

GRADUATE PROGRAM

UT Computer Science offers students an array of options for their graduate education. Students can expect to learn from both world-class faculty as well as their peers, who are carefully selected for their potential to shape the future of the field.

Applicants are evaluated for admission based on their grades, test scores, computer science background, letters of reference, and a statement of purpose. Applicants are also encouraged to provide a resume and publications, if applicable.

UT Austin is committed to maintaining a diverse student population. Students from around the world and from traditionally underrepresented groups are encouraged to apply.

GRAD STUDENTS / INCOMING STUDENTS

	GRAD STUDENTS	INCOMING STUDENTS
On-Campus MS	117	64
On-Campus Ph.D.	242	52
Online MS in Computer Science	687	381
Online MS in Data Science	769	282

fall 2022

GENDER incoming students, fall 2022

On-Campus MSCS — 41% / 59%

On-Campus Ph.D. — 27% / 73%

Online MSCS — 24% / 2% / 74%

Online MSDS — 25% / 3% / 73%

■ unreported

WHERE OUR GRADUATE STUDENTS COME FROM

incoming students, fall 2022

Texas
- 9 — On-Campus MSCS
- 8 — On-Campus PhD
- 85 — Online MSCS
- 75 — Online MSDS

United States
- 6 — On-Campus MSCS
- 12 — On-Campus PhD
- 135 — Online MSCS
- 112 — Online MSDS

International
- 49 — On-Campus MSCS
- 32 — On-Campus PhD
- 161 — Online MSCS
- 95 — Online MSDS

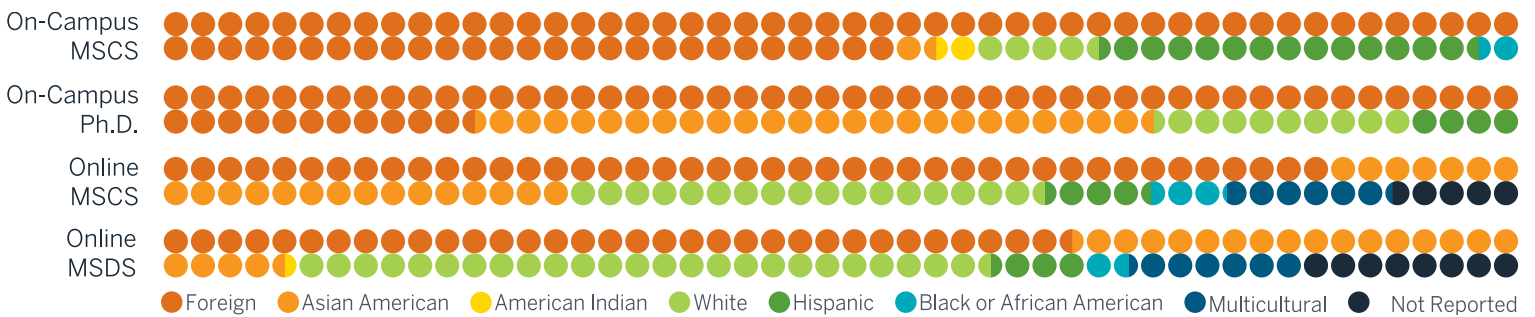*Demographic categories as provided by UT.*

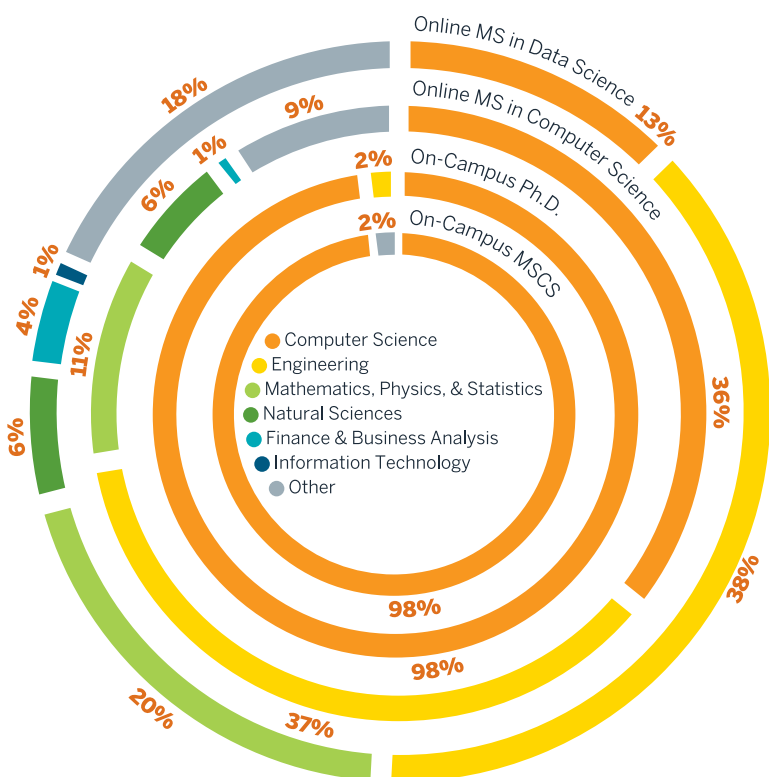## DIVERSIFYING LEADERSHIP IN THE PROFESSORIATE (LEAP) ALLIANCE

UT Computer Science is a founding member of the Diversifying Leadership in the Professoriate (LEAP) Alliance, which works to increase the diversity of the future leadership in the computing professoriate at research universities as a way to achieve diversity across the field.

ETHNICITY incoming students, fall 2022

On-Campus MSCS

On-Campus Ph.D.

Online MSCS

Online MSDS

● Foreign　● Asian American　● American Indian　● White　● Hispanic　● Black or African American　● Multicultural　● Not Reported

UNDERGRADUATE MAJORS OF INCOMING GRAD STUDENTS
incoming students, fall 2022

Online MS in Data Science 13%
Online MS in Computer Science
On-Campus Ph.D. 2%
On-Campus MSCS 2%

18%
9%
1%
6%
1%
4%
1%
11%
6%
20%
37%
98%
98%
38%
36%

● Computer Science
● Engineering
● Mathematics, Physics, & Statistics
● Natural Sciences
● Finance & Business Analysis
● Information Technology
● Other

KEVIN SONG
Ph.D. Student, Computational Biology

Kevin is a Ph.D student under Professor Etienne Vouga. His research interests lie at the intersection of information theory and computational biology and physics, specifically in estimating entropy using computational techniques. Historically, for complex systems, entropy estimation has been a very difficult problem, and even small breakthroughs could open up avenues for rapid advancement in fields like computational drug discovery or cancer modeling. Outside of the lab, Kevin tries to bring computer science to communities that would otherwise not be able to experience it. He has led sessions and written curricula for UT's Coding in the Classroom program, which aims to introduce computer science to K-5 children in underserved communities in Austin, and has participated in multiple Hour of Code events.

GRADUATE PROGRAM DEGREE OPTIONS

UT Computer Science offers a master's program on campus or online as well as an on-campus PhD program. The master's programs are intended as terminal degrees, and our Ph.D. program is designed for students who wish to pursue research careers, either in academia or in industry. The department's graduate program, begun in 1966, is ranked consistently among the top ten graduate programs in the country.

PH.D. PROGRAM

The overriding goal of the Ph.D. program is to show students how to conduct outstanding research, preparing them for research careers in academia and industry alike. All Ph.D. students must become involved in research within their first semester and continue their involvement throughout their time at UT Computer Science.

As a result of this early immersion, UTCS Ph.D. students are often recognized in the wider research community well before they graduate. They regularly travel to conferences and present papers, and they often receive best paper awards.

DOCTORAL STUDENT SUPPORT

Successful applicants to the Ph.D. program for fall semesters will be considered for doctoral fellowships. Exceptional incoming computer scientists in the graduate program are candidates for the prestigious Provost's Graduate Excellence Fellowship. The University of Texas at Austin is working to identify talented and exemplary graduate students to receive four years of fellowship support with the goal of helping them excel in their vital role of advancing research, mentoring undergraduates, and fostering discovery alongside top-tier faculty.

In addition to the doctoral fellowships, Ph.D. students may be offered teaching assistantships and graduate research assistantships. Most Ph.D. students obtain a graduate research assistantship by the second or third year, working under a research supervisor.

AMANDA PRIESTLEY
Ph.D. Student, Theory

Amanda is a second-year Ph.D. student advised by Professor Anna Gál. She is currently studying problems at the intersection of computational complexity theory and combinatorics. Amanda also received her BS in computer science from UTCS, and attending UT as an undergraduate exposed Amanda to numerous research areas in her field. As a graduate student, she has appreciated the department's dedication to allowing ample time for research. Amanda's mentors have always encouraged her to pursue the problems that interest her most, and she is grateful to continue to work with professors for whom she has a deep respect and who continue to inspire her.

MASTER'S PROGRAM

The master's program is designed to be flexible enough to accommodate the needs of students who have just completed an undergraduate degree in computer science and want to further their studies as well as those with degrees in areas other than computer science who seek to broaden their education in the discipline.

All programs are taught by UT faculty, many of whom are award-winning leaders in the computer science research community, and designed to provide students with the skills they need to become competitive candidates in the job market and excel in academic or industry careers of their choosing.

FIVE-YEAR INTEGRATED B.S./M.S. DEGREE

The department offers three integrated five-year programs that enable highly motivated students with strong academic records to earn a bachelor of science in computer science and a master of science in computer science, information studies, engineering, or mathematics (CSEM) in a five-year period.

The integrated track prepares students with the leadership skills and technical depth required for competitive Ph.D. programs and professional positions.

SAMUEL LABERGE
5-Year Integrated Master's Student

Sam joined UTCS in the fall of 2018 and has been honored twice with the Endowed Presidential Scholarship and is a Distinguished College Scholar. In his second year at UT, Sam became a teaching assistant for one of the department's introductory programming classes, and when covid hit in 2020, he co-developed a website to help faculty manage newly remote office hours. Outside of class, Sam is a cellist in the UT University Orchestra and has interned as a Software Engineer at WP Engine and Stripe. Before going into industry, Sam is pursuing an MS in Computer Science through UT's 5-Year integrated Master's program.

ON-CAMPUS RESEARCH TRACK DEGREE OPTIONS

The department offers two on-campus master's degree options for students interested in pursuing a research career: the MSCS with thesis and the MSCS no thesis/no report.

ONLINE PROFESSIONAL DEGREE PROGRAMS

UTCS offers two online master's programs that provide flexible learning environments while fostering personal engagement between professors and students.

Master of Computer Science Online

The Master of Science in Computer Science Online program supplies rigorous training to expand students' expertise in areas such as advanced systems design, machine learning, and artificial intelligence.

Master of Data Science Online

The Master of Science in Data Science online program, taught in partnership with the department of statistics and data sciences, gives students foundational knowledge in statistical theory while preparing them to apply their skills in the computer science realm. Students can expect a rigorous curriculum that combines theories and methods from both a statistical and computer science perspective.

RESEARCH

GRADUATE RESEARCH

Whether students are expanding professional paths or pursuing academic careers, UT graduate programs provide the cutting-edge skills they'll need to succeed. UT Computer Science is home to one of the most diversified computer science graduate programs in the nation.

GRADUATE PROGRAM RANKINGS
US News & World Report, 2022

9TH U.S. Computer science graduate programs

7TH Theory

9TH Programming languages

10TH Artificial intelligence

10TH Systems

ARTIFICIAL INTELLIGENCE

Artificial intelligence addresses the challenges of machine cognition, spanning the theoretical and empirical across diverse subfields such as machine learning, human-computer interaction, and robotics.

BIOINFORMATICS & COMPUTATIONAL BIOLOGY

Bioinformatics and computational biology uses biologically inspired artificial intelligence and machine learning methods to solve complex problems and applies data mining to biological experiments.

COMPUTER ARCHITECTURE

Computer architecture research lies between software and hardware, exploring the foundational implementation and method of how computers function.

COMPUTER VISION

Computer vision trains computers and systems to identify, classify, and interpret digital images and video, allowing them to "understand" the visual world.

FORMAL METHODS

Formal methods uses mathematical techniques to assist with specification, design, implementation, and verification processes to make hardware and software systems more reliable.

GRAPHICS AND VISUALIZATION

Graphics and visualization studies methods for manipulating and interacting with digital images and visual content as well as processing and modeling datasets.
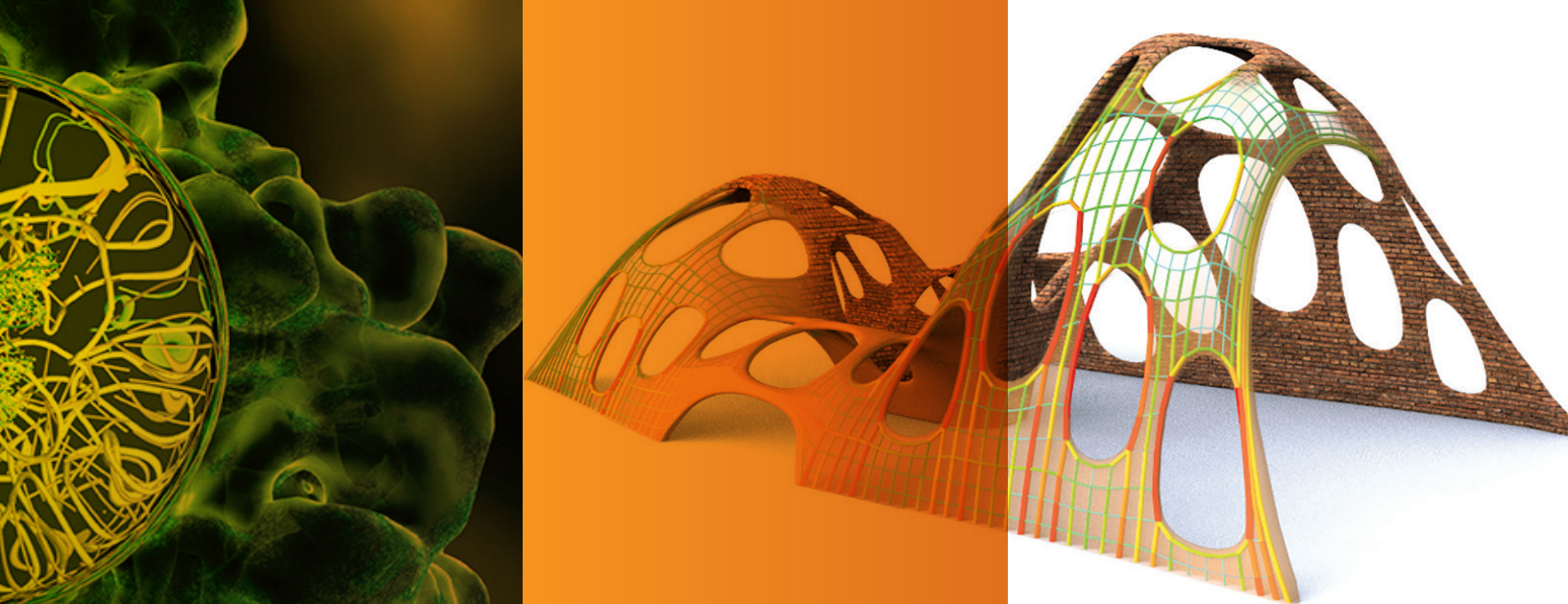
HUMAN-COMPUTER INTERACTION

Human-computer interaction studies the connection between humans and the design of computing technologies with the goal of making communication more effective and accessible.

MACHINE LEARNING

Machine learning is a branch of artificial intelligence focused on enabling machines to learn from data and make decisions with minimal human intervention.

NATURAL LANGUAGE PROCESSING

Natural language processing helps computers comprehend, decipher, and manipulate text and spoken words, bridging the gap between human language and machine communication.

OPERATING SYSTEMS, DISTRIBUTED SYSTEMS, & NETWORKING

Systems research builds large prototype software systems that convincingly demonstrate novel design principles and implementation techniques using realistic workloads.

PARALLEL COMPUTING

Parallel computing researchers pursue computational efficiency by breaking down long calculation processes into smaller tasks that can be solved simultaneously.

PROGRAMMING LANGUAGES AND COMPILERS

Programming languages and compiler research delves into novel techniques to transform the way software is expressed in written form, enhancing program efficiency and durability.

ROBOTICS

Roboticists create independently functioning agents that can perform tasks across a variety of applications ranging from transportation to healthcare to manufacturing.

SCIENTIFIC COMPUTING

Scientific computing research is at the intersection of mathematics and computer science, using advanced computing capabilities to solve complex problems.

SECURITY & PRIVACY

Security research uses theoretical and applied approaches to increase information safety while simultaneously exposing security flaws in systems .

THEORETICAL COMPUTER SCIENCE

Theory focuses on the theoretical foundations of computer science and frequently relies on rigorous mathematical proofs. Potential applications include algorithm design and quantum computation.

FACULTY

At UT Computer Science, students have a unique opportunity to achieve excellence in scientific discovery and technological innovation through rigorous coursework and cutting-edge research. This is made possible, in no small part, by access to top-notch faculty who are among the most distinguished leaders in academia. Below is a short sampling of the educators who make the department a dynamic and innovative place to learn.

Scott Aaronson is a theoretical computer scientist whose research focuses on the capabilities and limits of quantum computers, and more generally on computational complexity and its relation to physics. His recent interests include how to demonstrate a quantum computing speedup with the technologies of the near future.

Aditya Akella works on improving the performance, reliability, and correctness of Cloud and Internet infrastructure. His research straddles the boundary between computer networking and adjacent areas such as operating systems, databases, and formal methods and has impacted production systems run by some of the world's largest tech companies.

Shuchi Chawla is a theoretical computer scientist specializing in the areas of algorithm design and economics and computation. Her research interests lie in approximation and online algorithms, algorithmic game theory and mechanism design, data-driven algorithm design, combinatorial and stochastic optimization, algorithmic fairness, and algorithmic issues in networks and systems.

Eunsol Choi studies natural language processing, machine learning, and computational social sciences, with a particular focus on extracting and querying information about entities from text. Her current research focuses on reading comprehension, answering questions, and understanding entities.
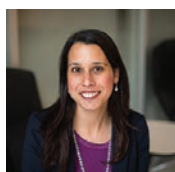
Işıl Dillig's main research interests are in program analysis/verification, program synthesis, and automated logical reasoning. She is interested in synthesizing programs from formal or informal specifications and in developing tools and techniques to make software systems more secure and reliable.

Kristen Grauman's computer vision and machine learning research focuses on visual recognition and large-scale image and video retrieval. The goal of her research is to develop algorithms to categorize and detect objects, activities, or scenes, and large-scale visual search techniques that can rapidly identify the most relevant content within massive collections.

Adam Klivans' research interests include learning theory, computational complexity theory, pseudorandomness, limit theorems, and Gaussian space. He has contributed to the development of an understanding of algorithms that learn halfspaces, such as support vector machines.

Calvin Lin's compiler research is currently focused on security and scalable and precise analysis, including pointer analysis. He is also interested in microarchitecture. Dr. Lin is the Director of the Turing Scholars Honors Program and the principal investigator for Program Project Engage.

Raymond Mooney's research focuses on machine learning, data mining, and natural language processing. He is a member of the Artificial Intelligence Laboratory and leads the Machine Learning Research Group, which has explored a wide variety of issues in machine learning for over two decades.

Alison Norman is a UT Austin Provost Teaching Fellow. She teaches undergraduate operating systems and co-chairs UTCS efforts to improve the experience of all people from historically underrepresented groups.

Keshav Pingali works in programming languages and compiler technology for program understanding, optimization, and parallelization. His current research interests are methodologies and tools for programming multicore processors, with a focus on irregular applications from domains like graphics, social networks, and data mining.
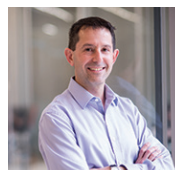
Peter Stone's main research interest in artificial intelligence is understanding how we can best create complete intelligent agents. His application domains have included robot soccer, autonomous bidding agents, autonomous vehicles, autonomic computing, and social agents.

Etienne Vouga's research interests include computer graphics, applied mathematics, and the geometry of physics. He studies the geometry of the physics of everyday materials — how hair twists and curls, the way cloth wrinkles and folds, and the relationship of a stone building's shape to its stability.
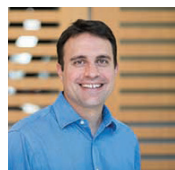
Brent Waters' research interests are in the areas of cryptography and computer security. His work has focused on identity-based cryptography, functional encryption, and code obfuscation. He is noted as a founder of functional encryption and attribute-based encryption.

COMMUNITY

You embrace a challenge. You're open to discovery. You want to change the world, for yourself and for others.

Consider, then, a place that's committed to innovative learning and research, that encourages creativity and critical thinking to solve real-world problems. See yourself at the heart of a vibrant city that expands learning opportunities—that is, when it's not paying it forward or keeping it weird.

THE UNIVERSITY

The University of Texas at Austin, and the city it calls home, offer students a truly unique environment where they can thrive and succeed.

The University of Texas at Austin is a bold, ambitious leader. Ranked among the biggest and best research universities in the country, UT Austin is home to more than 51,000 students and 3,000 faculty. UT Austin is working to change the world through groundbreaking research and cutting-edge teaching and learning techniques. Tradition and innovation blend seamlessly to create a robust collegiate experience.
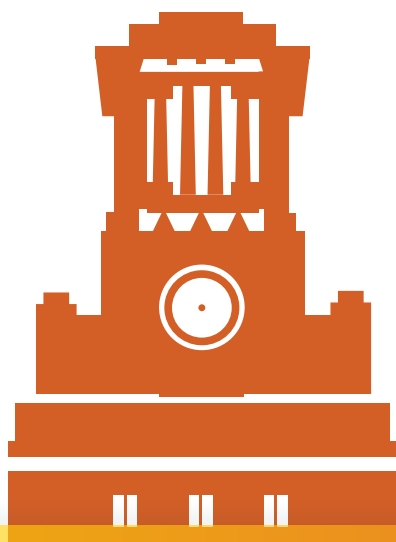
Ranked
#7 **U.S. PUBLIC COLLEGES**
Business First, 2020

Ranked
#8 **BEST-VALUE PUBLIC COLLEGES**
Kiplinger, 2019

Ranked
#10 **MOST INNOVATIVE PUBLIC SCHOOLS**
U.S. News & World Report, 2021

Ranked
#10 **TOP PUBLIC SCHOOLS, NATIONAL UNIVERSITIES**
U.S. News & World Report, 2022

Ranked
Top 10 **IN MORE THAN 48 AREAS, BEST GRADUATE SCHOOLS**
U.S. News & World Report, 2020-21

THE CITY

Become a part of a diverse community known around the world for its bold spirit of pride and excellence. Define your future as you question ideas, pursue long-held passions, and explore new interests, redefining your ideas of what's possible.

The University of Texas at Austin sits at the heart of the fastest-growing city in the United States. Diverse and inclusive, Austin, Texas, is a city for the 21st century.

For fun, locals and visitors alike flock to the annual South by Southwest and Austin City Limits festivals; keep cool at the iconic, spring-fed Barton Springs Pool; and enhance their understanding of the world at the Harry Ransom Center, located on the university campus and home to a Gutenberg Bible, the world's first photograph, and 30 million manuscripts.

But it's not all fun and games around here. Professional opportunities abound, as well. Interested in tech? Check out Google, Tesla, AMD, and Oracle just for starters. Government? With Austin's strong reputation as a tech and business hub, the list of Fortune 500 companies with headquarters and/or campuses in town is growing by the day and includes Dell, Google, Apple, Facebook, Tesla, and more.

Ranked
#1 TECH HUB
Bloomberg, 2021

Ranked
#1 IN JOB GROWTH
Wall Street Journal, 2022

Ranked
#1 CITY FOR REAL ESTATE INVESTMENT
Holland Partner Group, 2021

Ranked
#1 BEST PLACE TO LIVE IN TEXAS
US News & World Report, 2021

Ranked
#2 METRO FOR GAMERS & DIGITAL NOMADS

Ranked
#2 CITY IN JOB OPPORTUNITIES
LinkedIn, 2021

Ranked
#3 CITY FOR JOB CREATION & SUSTAINABILITY

Ranked
#5 BEST PLACE TO LIVE IN THE U.S.
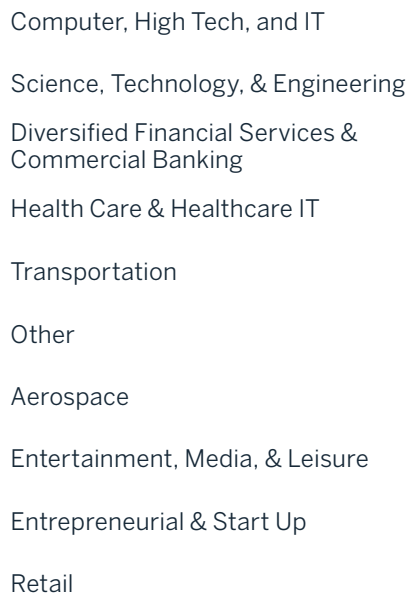US News & World Report, 2021

CAREERS

Because UT Computer Science is both a top-ten ranked program and one of the largest producers of computer science graduates in the country, it has developed strong ties with private industry, resulting in exceptional internship and career opportunities for our students. UTCS is the beating heart of Austin's thriving tech scene, providing alumni who choose to stay in Austin with extensive employment opportunities at global tech companies including Tesla, Dell, Oracle, and many others. UTCS also offers alumni access to one of the world's most extensive global alumni networks, empowering graduates to build thriving careers in Silicon Valley, New York City, Tokyo, or anywhere in between.

INDUSTRIES UTCS GRADUATES WORK IN
undgergraduate class of 2021

- Computer, High Tech, and IT
- Science, Technology, & Engineering
- Diversified Financial Services & Commercial Banking
- Health Care & Healthcare IT
- Transportation
- Other
- Aerospace
- Entertainment, Media, & Leisure
- Entrepreneurial & Start Up
- Retail

AVERAGE SALARY
$116,855

- **75%** accept offers of **$95,000+** annually
- **50%** accept offers of **$115,000+** annually
- **25%** accept offers of **$130,000+** annually
- **17%** accept offers of **$150,000+** annually

AVERAGE BONUS
$39,377

- **69%** reported a **sign-on bonus**
- **50%** reported **moving allowances**
- **56%** reported **equity/ stock options**

graduating seniors
undergraduate class of 2021

TOP EMPLOYERS
undergraduate class of 2021

amazon · Apple · CITADEL · CITRIX · Expedia
facebook · Google · Jane Street · Microsoft · twilio

The UTCS curriculum spans the full spectrum of modern computer science topics, and students are encouraged to dig deeper through concentrations and specialized academic programs. Students can also explore professional and personal interests through the department's many student organizations. Together—and in conjunction with recruitment programs that empower students to build relationships with top tech employers across the country—these opportunities prepare UTCS graduates to excel on their chosen paths, both professional and academic.

BARBARA JONES
B.S. 1998

For Barbara Jones, first in her family to finish college, graduating from UTCS "was a game-changer." Often the only Black woman on tech teams, she decided to found her own diverse startup with diversity built into its DNA, Lillii RNB, an IT consultancy working with Fortune 500 companies and government agencies.

KEVIN WANG
B.S. 2020

Over the course of Kevin's undergraduate career on the Forty Acres, he had the opportunity to spend summers interning at Amazon and Salesforce, working in software development and engineering. Upon graduation, Kevin went on to San Francisco to join Salesforce as a full-time software engineer.

CHELSIE BARRIENTOS
B.S. 2022

During her time in UTCS, Chelsie participated as an intern in Mission EDC's Career Readiness and Empowerment of Women (CREW) Program. She then went on to work as an Explore Intern at Microsoft, leading to her current position with the company as a full-time software engineer.

The emphasis on research methodology in UT Computer Science's graduate program qualifies graduates to excel in academic research as well as applied research settings in corporations, consulting firms, government agencies, and nonprofit organizations. Following are two examples of the research and career paths UT graduate students have pursued:

TARA ESTLIN,
PH.D. 1998

Tara is the deputy chief technologist for mission systems and operations at the NASA Jet Propulsion Laboratory. Her research under Professor Ray Mooney focused on machine learning for AI planning systems.

KARU SANKARALINGAM,
PH.D. 2006

Karu is a professor at University of Wisconsin, where he leads the Vertical Research Group. His research as a Ph.D. student was in the TRIPS project, primarily focused on computer architecture.

SURBHI GOEL,
PH.D. 2012

Surbhi is a postdoctoral researcher at Microsoft Research NYC. Her research under Professor Adam Klivans focused on developing theoretical foundations for modern machine learning paradigms including deep learning.

ALUMNI

Earning a degree means a lot more than just getting a diploma. It means becoming part of a network that will stay with you for the rest of your life.

Long after you've graduated, the time you spent here will continue to shape your life and career. The legacy that follows you when you leave the Forty Acres is that of a top-ten computer science department with one of the largest computer science alumni networks in the world. You will find them everywhere, from industry giants like Google, Facebook, and Microsoft to fast-moving startups where they are creating the companies that will shape tomorrow.

With over 15,000 computer science alumni and nearly half a million alumni university-wide, you can be confident that you will be connected to one of the world's largest alumni networks. The Texas Exes and UT Computer Science are dedicated to supporting alumni around the globe in their professional endeavors, as well as fostering community through events like barbecues, tailgates, and tech talks on the latest topics in the field. The Texas Exes has over 140 chapters and networks worldwide, so you can be assured that regardless of whether you live in the Northeast, the Southwest, London, Beijing, or right here in Austin, the Texas network will be there for you.

TARUN NIMMAGADDA

Entrepreneurship and computer science go hand in hand, as UT Computer Science alum Tarun Nimmagada put it, "Computer science is broad and applicable [and is] playing a leading role in increasing our understanding of the world." For Tarun this entrepreneurship mindset was sharpened during his years as a student at UTCS. He was in the Turing Scholars Honors program and was introduced to computer science research early on. With this research background, Tarun entered a competition in his junior year offering a hefty $50,000 reward for anyone who could come up with a business idea with a positive social impact. He submitted an idea to build technology that assists people with disabilities to move around campus, built a team, and won. For Tarun, this is just the beginning, he has already been named in Inc's 30 Under 30, Forbes' 50 Most Promising Companies, recognized by the White House as one of the top 100 companies founded by young entrepreneurs. He also currently sits on UTCS's advisory council.

ROMELIA FLORES

UTCS alum Romelia Flores is an IBM Distinguished Engineer and Master Inventor known for driving innovative projects which leverage leading-edge technology, including hybrid cloud and artificial intelligence. She has obtained 73 US Patents with an additional 15 patents pending—making her one of IBM's top innovators. Her career in computer science began at UT Austin, as a biology major. The day one of her classmates asked her if she'd ever taken a computer class was a defining moment in her career path. At the time, she didn't even know what a computer was. Her first computer science course was an introduction to Pascal programming taught by one of the first women to get a Ph.D. in computer science, Nell Dale. Romelia fell in love with computer science. To her it was like solving puzzles, something she had always enjoyed. While working on her degree, she obtained a summer internship at IBM and continued to work there part-time as a full-time student. She received her Bachelor's in Computer Science in 1982, was offered a programming job at IBM as a full-time employee, and has worked there since. Her advice for students is to find something they're passionate about. For Romelia, true success is defined by doing what makes you happy and what drives you.

TOP CITIES & STATES FOR UTCS ALUMNI

8%

16%

3%

3%

12%

44%

9%

5%
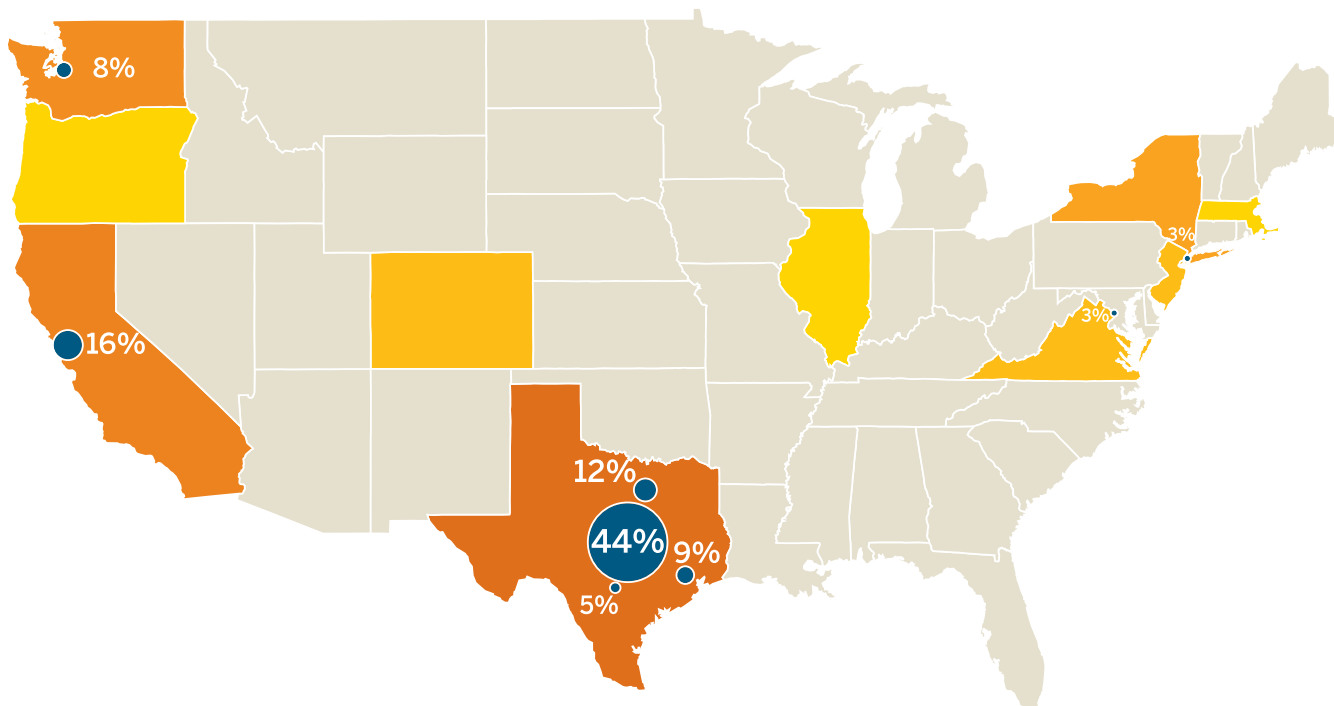
DEPARTMENT OF COMPUTER SCIENCE

2317 Speedway, 2.702, Austin, Texas 78712

Phone: (512) 471-7316 Fax: (512) 471-7316

www.cs.utexas.edu

UNDERGRADUATE OFFICE

under-info@cs.utexas.edu

GRADUATE OFFICE

csadmis@cs.utexas.edu

The University of Texas at Austin
Computer Science
College of Natural Sciences

@TEXAS

College of Natural Sciences