Computer Science

Master of Science in Computer Science Doctor of Philosophy

For More Information

Campus address: Gates Dell Complex (GDC) 2.702, phone (512) 232-7407, fax (512) 471-8885; campus mail code: D9500

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Facilities for Graduate Work

To provide the most advanced resources for teaching and research, the Department of Computer Science manages its own network and system of more than 1,000 hosts.

A staff of 12, under the direction of the department chair, specifies, buys, installs, and maintains this computing infrastructure. Through accounts on the department's Linux and MacOS workstations, students, faculty members, and staff have access to public laboratories and private equipment.

Many different computer systems are available for research use by faculty members and students in the department. The department operates a general-purpose high-throughput computing (HTC) Linux cluster with over 2,000 cores, Dell PowerEdge checkpoint servers, 100 nVidia GPUs of various types, and a NetApp filer with 77TB of storage. This cluster, as well as all public computing resources, are available to everyone via HTCondor, a resource management tool for widely distributed systems. There are several hundred Linux machines in public labs, and there are over 100 linux boxes on graduate desks. Several hundred other workstations of varying configurations and platforms are located in private research labs or on researchers' desks. All departmental computers are networked together using one or 10 Gigabits per second Ethernet. The network, managed and maintained by staff, consists of over 100 Cisco switches, with a Cisco 6513 serving as its point of presence and firewall. Network-accessible storage is provided by a NetApp filer with 77TB of space dedicated to cluster computing work and 75TB for home directories as well as infrastructural, project and course-related storage.

Areas of Study

Graduate study in computer science is offered in the following areas: analysis of algorithms; artificial intelligence; automated reasoning; communication protocols; compilers; computational biology; computational complexity; computational visualization; computer architecture; computer graphics; computer networks; computer vision; cryptography; data mining; database management; distributed systems; fault-tolerant computing; formal methods; machine learning; mathematical software; mobile and ad hoc networks; natural language processing; neural networks; numerical analysis; operating systems; parallel programming; programming language design and implementation; randomized algorithms; real-time systems; robotics; scientific computing; secure computing; software construction from components; system modeling; theoretical computer science; and wireless networks. The Master of Science and PhD degrees in Computer Science are STEM Designated Degree Programs, as identified by the Department of Homeland Security for purposes of the 24-month STEM optional practical training extension.

Graduate Studies Committee

The following faculty members served on the Graduate Studies Committee (GSC) in the spring 2024 semester.

Scott J Aaronson Aditya Akella Venkat Arun Chandrajit L Bajaj George Biros Joydeep Biswas James Bornholt Alan C Bovik **Constantine Caramanis** Swarat Chaudhuri Shuchi Chawla Eunsol Choi Inderjit S Dhillon Isil Dillig Georgios-Alex Dimakis Gregory C Durrett Katrin E Erk Donald S Fussell Anna Gal Joydeep Ghosh **Milos Gligoric** Kristen L Grauman Danna Gurari David Harwath **Qixing Huang** Warren A Hunt Jr Nick Hunter-Jones Alexander Huth Daehyeok Kim Adam R Klivans Philipp Kraehenbuehl Matthew Alan Lease Min Kyung Lee Jessy Li Calvin Lin Qiang Liu Roberto Martin-Martin Kenneth McMillan

Risto P Miikkulainen Daniel P Miranker Aloysius K Mok Raymond J Mooney Dana Hadar Moshkovitz aaronson Shravan Ravi Narayan Evdokia Nikolova Gordon S Novak Jr Amy Pavel **Georgios Pavlakos** Simon Peter Keshav K Pingali C Greg Plaxton William H Press **Eric Price** Lili Oiu Vijaya Ramachandran Christopher J Rossbach Sujay Sanghavi Purnamrita Sarkar James G Scott Hovav Shacham David Soloveichik Peter H Stone **Dixin Tang** Andrea Lockerd Thomaz Kevin Tian Ufuk Topcu Vijaychidambaram Velayudhan Pillai Paul Etienne Vouga Atlas Wang Brent R Waters Emmett Witchel John Wright David Junzi Wu Amy Zhang Yuke Zhu David I Zuckerman

Admission Requirements

Most entering graduate students have degrees in computer science. Students with degrees in other areas may be considered for admission; if admitted, they may be required to take undergraduate courses in computer science, without credit toward a graduate degree, to satisfy background requirements.