

Computer Science, PHD

Modality

On Campus

Program URL

<https://cs.georgetown.edu/graduate/phd/>

The Department of Computer Science is home to advanced research on the cutting edge of computing technology. The doctoral program connects students with the ideas, skills, and opportunities to shape the digital world in which they live.

The program prepares students for research and teaching careers in academia, as well as technical careers in industry and government. The program's primary area of concentration includes computer and network security; cryptography and privacy; information search and retrieval; machine learning, data mining, and natural language processing; networking and distributed systems; and parallel and distributed algorithms.

Academic Policies

The academic policies and procedures of the Computer Science program are those specified in Georgetown University's Bulletin and the program handbook.

Requirements

Program Requirements

There are six main requirements for the Doctor of Philosophy program:

1. Complete the requirements for the Master of Science degree.
2. Pass the core and area qualifier requirements.
3. Take three doctoral seminars.
4. Complete the workshop portion of the Apprenticeship in Teaching Program.
5. Complete and defense a dissertation proposal.
6. Complete and defend the dissertation.

Required Examinations

The purpose of the qualifying exams is to ensure that students have a graduate level of competence in the fundamentals of computer science and the ability to understand and explain literature relevant to their research interests. The qualifying exam is divided into two parts: Three Core Exams and One Area Exam.

Core Exams

The core qualifier requirement is designed to assess a student's understanding of foundational areas of computer science. To pass the core qualifier, students must earn an A- or better in at least three courses from the algorithms/theory and systems buckets used in the M.S. degree requirement. Students who receive transfer credit or advanced standing due to another equivalent Master of Science for a course in these areas may request the option of a written qualifying exam on the topic of a corresponding Georgetown University course being offered during the semester in which the request is made.

Area Exam

The area exam is designed to assess students' ability to read, analyze, and communicate current research results. Students complete a literature review in an area agreed upon by the student and their adviser. Students are expected to synthesize and analyze existing work that will be necessary for them to complete their dissertations.

Thesis Requirements

After identifying a dissertation adviser and topic, students work with their dissertation adviser to form a committee consisting of at least three additional members who are full-time faculty in the Department of Computer Science. If appropriate, one member of the committee can be a person from another department at Georgetown or another university, or from industry or government.

Doctoral students must write a dissertation proposal, defend (or present) the proposal in a seminar open to the public, and obtain their committee's unanimous approval. The proposal is a serious scholarly work of high quality that identifies the problem of interest, related work, how existing approaches are inadequate, the proposed approach, the plan of study, how progress and success is to be measured, and preliminary results. The proposal should be supported with the student's peer-reviewed conference or journal publication.

For the public defense of the proposal, students should plan a 45-minute presentation with 15 minutes reserved for public questions. The student, adviser, the members of the committee, and the Director of Graduate Studies or a designee must be physically or virtually present for the public defense of the proposal.

After the period of public questions, the adviser excuses members of the audience so the committee can privately question the student. The adviser then excuses the student so the committee can deliberate in private about the sufficiency of the proposal and any required modifications. The student must pass with a unanimous vote.

Related Programs

- Computer Science Minor (<http://coursecatalog.georgetown.edu/programs/computer-science-minor/>)
- Computer Science, AB (<http://coursecatalog.georgetown.edu/programs/computer-science-ab/>)
- Computer Science, BS (<http://coursecatalog.georgetown.edu/programs/computer-science-bs/>)
- Computer Science, Ethics & Society, AB (<http://coursecatalog.georgetown.edu/programs/computer-science-ethics-society-ab/>)
- Computer Science, MS (<http://coursecatalog.georgetown.edu/programs/computer-science-ms/>)
- Post-Baccalaureate Computer Science Certificate (<http://coursecatalog.georgetown.edu/programs/postbaccalaureate-computer-science-undergraduate-certificate/>)