



University of California, Santa Barbara
Program Learning Outcomes

PhD in Computer Science

Upon graduation with a PhD in Computer Science:

Core Knowledge

- Students will be able to demonstrate a broad knowledge of areas cutting across the field of Computer Science including systems, applications, and foundations.
- Students will be able to demonstrate a deep understanding and expertise in one or more areas of Computer Science specialization.

Research Methods and Analysis

- Students will be able to understand and identify the range of qualitative and quantitative methodologies typically used in Computer Science research.
- Students will be able to digest and critically analyze the state of computing research guided by an understanding of theory, engineering practice, and the relevant technical literature.
- Students will be able to plan and execute an original research project, analyze relevant findings, and organize results into a coherent argument.

Pedagogy

- Students will be able to communicate technical material to audiences ranging from general to specialized.
- Students will be able to present their research effectively through oral presentations and through the development of supporting materials as appropriate.
- Students will possess classroom management skills, techniques for effective lecturing, and methods for guiding and assessing undergraduate students.

Scholarly Communication

- Students will be able to create effective written technical arguments that contribute to the understanding of the field by their peers.
- Students will be able to review and cogently synthesize relevant literature.
- Students will write in a level and style of English consistent with that found in leading academic conferences and journals.
- Students will understand and properly use citations and references to make their technical arguments and justify critical assumptions.

Continued on Page 2

University of California, Santa Barbara Program Learning Outcomes

Professionalism

- Students will be able to articulate the importance of contributing technical advances to their professional communities.
- Students will be familiar with the relevant professional societies including, but not limited to, the Association for Computing Machinery (ACM) and the Institute of Electrical and Electronics Engineers (IEEE).
- Students are able to identify their career options post-graduation, both industrial and academic.
- Students will demonstrate a commitment to the thoughtful consideration of fundamental principles of ethical professional conduct.

Independent Research

- Students will demonstrate an ability to develop their own research projects that meet high standards of theoretical and methodological rigor.
- Students will produce scholarship that is comparable in scope and format to articles, books, and conference papers that appear in leading peer reviewed venues and presses in the field of Computer Science.