Computer Science

(College of Letters and Science)

Nina Amenta, Ph.D., Chairperson of the Department

Department Office, 2063 Kemper Hall
530-752-7004; http://www.cs.ucdavis.edu

Faculty, For complete faculty listing, please see Engineering: Computer Science, on page 268.

The Major Program

The Department of Computer Science administers two majors: Computer Science and Engineering (CSE), in the College of Engineering, and Computer Science (CS), in the College of Letters and Science. It also administers two minors: Computer Science, in the College of Letters and Science, and Computational Biology, in the College of Engineering. For information on the Computer Science and Engineering curriculum and the minor in Computational Biology, see Engineering: Computer Science, on page 268.

The primary differences between the CSE and CS majors are the extent of hardware coverage and curricular flexibility. The CSE major develops a solid understanding of the central machine, including hands-on experience with its hardware components. The CS major teaches some hardware, at the digital-design level, on simulators. The CSE major’s more generous hands-on experience with its hardware components. Students in the CS major receive a solid grounding in the fundamentals of computer languages, operating systems, computer architecture, and the mathematical abstractions underlying computer science. Students are prepared for both industry and postgraduate study.

B.S. Major Requirements:

UNITs
Preparatory Subject Matter ........... 50-55
Mathematics 21A-21B-21C, 22A or 67 ....... 15-16
Computer Science Engineering 20, 30, 40, 60 ......... 16
Computer Science Engineering 50 or
Electrical and Computer Engineering 70 .... 4
One series from the following four .... 15-19
(a) Chemistry 2A-2B-2C
(b) Chemistry 2A and Biological Sciences 2A, 2B
(c) Chemistry 2AH-2BH-2CH
(d) Physics 9A-9B-9C and Mathematics 21D
Depth Subject Matter ............... 51-54
Computer Science Engineering 122A, 120 or 122B, 140A, 150, 150A, 154A, 20
Computer Science Engineering 132 or
Mathematics 135A or Statistics 131A .... 4
Computer Science electives ......... 27-30
Minimum of 7 courses, including at least one mathematics or statistics course, from:
Computer Science Engineering courses
counted between 120 and 189 inclusive;
Computer Science and Engineering 193AB (counts as one);
one approved course of 3 or 4 units from
Computer Science and Engineering 192 or 199; Electrical and Computer Engineering 171, 172, 180A, 180B; Linguistics 177; Mathematics
courses numbered between 100 and 189,
excluding Mathematics 111, Statistics
131A, 131B, 135A, 151A.

No course can count as both a required course and a Computer Science elective.

Total Units for the Major .......... 101-109


Minor Program Requirements:

UNITs
Computer Science 60 ............... 4
Upper division Computer Science
Engineering courses ............... 20
Select any upper-division Computer Science Engineering courses. A single approved course of 3 or 4 units from
Computer Science and Engineering 192 or 199 is allowed.

Note. Computer Science Engineering 60 has a prerequisite chain of 20, 30, 40, and Mathematics 16A or 21A.

Graduate Study. See Graduate Studies, on page 111.

Computer Science (A Graduate Group)

Kwan-Liu Ma, Ph.D., Chairperson of the Group

Office, 2063 Kemper Hall (Department of Computer Science)
530-752-7044; gradinfoc@ucdavis.edu; http://www.cs.ucdavis.edu

Faculty

Venkatesh Akella, Ph.D., Professor
(Electrical and Computer Engineering)

Nina Amenta, Ph.D., Professor
(Computer Science)

Zhaojun Bai, Ph.D., Professor
(Computer Science)

Matthew Bishop, Ph.D., Professor
(Computer Science)

Hao Chen, Ph.D., Assistant Professor
(Computer Science)

Harry Cheng, Ph.D., Professor
(Mechanical and Aerospace Engineering)

R. Holland Cheng, Ph.D., Professor
(Molecular and Cellular Biology)

Chen-Nea Chuah, Ph.D., Assistant Professor
(Electrical and Computer Engineering)

James P. Crutchfield, Ph.D., Professor
(Physics)

Ian Davidson, Ph.D., Associate Professor
(Computer Science)

Jesus M. D’Souza, Ph.D., Assistant Professor
(Mechanical and Aerospace Engineering)

Raissa M. D’Souza, Ph.D., Assistant Professor
(Mechanical and Aerospace Engineering)

Jesus DeLeoni, Ph.D., Professor
(Mathematics)

Prem Devanbu, Ph.D., Associate Professor
(Computer Science)

Matthew Farrans, Ph.D., Professor
(Computer Science)

Robert Faris, Ph.D., Assistant Professor
(Sociology)

Vladimir Flicker, Ph.D., Assistant Professor
(Computer Science)

Matthew Franklin, Ph.D., Professor
(Computer Science)

Dipak Ghosal, Ph.D., Professor
(Computer Science)

Todd J. Green, Ph.D., Assistant Professor
(Computer Science)

Daniel Gusfield, Ph.D., Professor
(Computer Science)

Francois Gygi, Ph.D., Professor
(Computer Science)

Bernd Hamann, Ph.D., Professor
(Computer Science)

Michael Hogarth, Ph.D., Associate Professor
(School of Medicine)

Greta Hsu, Ph.D., Assistant Professor
(Graduate School of Management)

Sanjay Joshi, Ph.D., Assistant Professor
(Mechanical and Aerospace Engineering)

Kenneth Joy, Ph.D., Professor
(Computer Science)

Louise Kellogg, Ph.D., Professor
(Geology)

Patrice Koehl, Ph.D., Professor
(Computer Science)

Mathias Koepp, Ph.D., Assistant Professor
(Mathematics)

Karl Levitt, Ph.D., Professor
(Computer Science)

Xin Liu, Ph.D., Associate Professor
(Computer Science)

Kwan-Liu Ma, Ph.D., Professor
(Computer Science)

Charles Martel, Ph.D., Professor
(Computer Science)

Norman Matloff, Ph.D., Professor
(Computer Science)

Nelson Max, Ph.D., Professor
(Computer Science)

E.O. Million, Ph.D., Professor
(Mathematics)

Deb Niemeier, Ph.D., Professor
(Civil and Environmental Engineering)

Prasant Mahapatra, Ph.D., Professor, Chair
(Computer Science)

Biswaath Mukherjee, Ph.D., Professor
(Computer Science)

Distinguished Graduate Mentoring Award

Michael Neff, Ph.D., Assistant Professor
(Computer Science)

Ronald Olsson, Ph.D., Professor
(Computer Science)

John Owens, Ph.D., Assistant Professor
(Electrical and Computer Engineering)

Raju Panedy, Ph.D., Associate Professor
(Computer Science)

Sean Peisert, Ph.D., Assistant Adjunct Professor
(Computer Science)

Bahram Ravani, Ph.D., Professor
(Mechanical and Aerospace Engineering)

Robert Redinbo, Ph.D., Professor
(Electrical and Computer Engineering)

David Rose, Ph.D., Professor
(Applied Science)

Garry Rodrigue, Ph.D., Professor
(Applied Science)

Phillip Rogaway, Ph.D., Professor
(Computer Science)

Ole Staffa, Ph.D., Assistant Professor
(Biological and Agricultural Engineering)

Henning Stahlberg, Ph.D., Assistant Professor
(Molecular and Cellular Biology)

Zhendong Su, Ph.D., Associate Professor
(Computer Science)

Ilias Tagkopoulos, Ph.D., Assistant Professor
(Computer Science)

Susan Usin, Ph.D., Professor
(Land, Air and Water Resources)

V. Rao Vemuri, Ph.D., Professor
(Applied Science)

S. Felix Wu, Ph.D., Professor
(Computer Science)

Rao Vemuri, Ph.D., Professor
(Applied Science)

Kent Wilken, Ph.D., Associate Professor
(Electrical and Computer Engineering)

David Woodruff, Ph.D., Professor
(Graduate School of Management)

Catherine Yang, Ph.D., Assistant Professor
Graduate School of Management)

Ben Yoo, Ph.D., Professor
(Electrical and Computer Engineering)

Emeriti Faculty

Ralph Algazi, Ph.D., Professor Emeritus
Meera Blattner, Ph.D., Professor Emeritus
S.L. Hakimi, Ph.D., Professor Emeritus
Peter Linz, Ph.D., Professor Emeritus
Manfred Kuschtizka, Ph.D., Professor Emeritus
Michael Soderstrand, Ph.D., Professor Emeritus
Donald Toppis, Ph.D., Professor Emeritus
Richard Walters, Ph.D., Professor Emeritus

Affiliated Faculty

Owen Carmichael, Ph.D., Assistant Professor
(Med: Neurology)

Graduate Study. The Graduate Group in Computer Science offers programs of study leading to the M.S. and Ph.D. degrees in Computer Science. The varied nature of the faculty brings a wide variety of research interests to the program. Research strengths lie in algorithms, computational biology, computer architecture, computer graphics and visualization, database systems, computer security and cryptography, computer networks, program specifications and...