

# Cynthia B. Lee

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## EDUCATION

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### University of California, San Diego

*La Jolla, CA*

Ph.D., Computer Science, 2009

Resource management tools and the user-scheduler relationship on massively parallel HPC systems.

Adviser: Dr. Allan E. Snavely

M.S., Computer Science, 2004

B.S., Computer Science, Literature minor, 2001

## PROFESSIONAL APPOINTMENTS

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### Lecturer

*Stanford University*

Autumn 2013-present

- Programming Abstractions in C++ (CS106B and CS106X), Probability and Statistics for Computer Scientists (CS109), Computer Organization and Systems (CS107), Problem Solving for the CS Technical Interview (CS9).

### iOS Project Manager Consultant

*DANO2*

June 2012-September 2012

Responsible for all software projects of a children's educational toy and game company, including several products in different stages of development, reporting directly to company President.

- iOS, Objective C, C, Cocoa, various 3<sup>rd</sup> party SDKs for iOS.

### Lecturer

*University of California, San Diego*

2007, 2008, 2011-2013

- Intro. Java Programming, MATLAB Programming for Science Majors, Theory of Computation, Advanced Data Structures, Discrete Mathematics, Computer Architecture, and Computer Processor Design (Xilinx)

### Graduate Student Researcher

*San Diego Supercomputer Center, UCSD*

2002-2009

In addition to dissertation work, performed memory hierarchy benchmarking tests on supercomputers nationwide, prepared codes for performance evaluation by integrating instrumentation tools, surveyed users to determine customer needs, and presented at international venues.

- Python, Perl, UNIX, shell scripting, PHP, C.

### Software Engineer and Classifier Team Lead

*Mohomine, Inc.*

1999-2002

Collaborated with undergraduate classmates who founded a search engine and document management start-up. Led a team in investigating and implementing machine learning and information retrieval algorithms, specifically document classification and clustering. Original contributions included a more accurate method of calculating a confidence score for the document classification task.

- Planned project goals and milestones, managed team members, designed and implemented both features and tests, produced developer and user documentation, resolved bug reports
- Implemented statistical methods for machine learning: SVM, Naïve Bayes, Scatter/Gather clustering

### Parallel Systems Research Intern

*NASA Ames Research Center*

*summers* 1996-1998

Worked with staff researchers to manage and administer cutting-edge parallel systems.

- UNIX platforms (AIX, BSD), shell scripting languages, C, web design.

- Johnson, William E., Irfan Ahmed, Vassil Roussev, and **Cynthia B. Lee**. “Peer Instruction for Digital Forensics.” Advances in Security Education Workshop (ASE), in conjunction with USENIX. August 2017.
- Johnson, William E., Allison Luzader, Irfan Ahmed, Vassil Roussev, Golden G. Richard III, and **Cynthia B. Lee**. “Development of Peer Instruction Questions for Cybersecurity Education.” Advances in Security Education Workshop (ASE), in conjunction with USENIX. August 2016.
- Zingaro, Daniel, Leo Porter, **Cynthia Lee**, Dennis Bouvier, Quentin Cutts, Robert McCartney, and Beth Simon. “A Multi-institutional Study of Peer Instruction in Introductory Computing.” ACM Technical Symposium on Computer Science Education (SIGCSE), March 2016. **Best Paper Award**.
- Taylor, Cynthia, Daniel Zingaro, Leo Porter, Kevin C. Webb, **Cynthia Bailey Lee**, Mike Clancy. “Computer Science Concept Inventories: Past and Future.” Computer Science Education, 24(4), 2014.
- Alvarado, Christine, **Cynthia Lee**, and Gary Gillespie. “New CS1 Pedagogies and Curriculum, The Same Success Factors?” ACM Technical Symposium on Computer Science Education (SIGCSE), March 2014.
- Lee, Cynthia Bailey**, Leo Porter, and Saturnino Garcia. “Can Peer Instruction Be Effective in Upper-Division Computer Science Courses?” ACM Transactions on Computing Education (TOCE) Special Issue on Alternatives to Lecture, 2013.
- Lee, Cynthia Bailey**. “Experience Report: CS1 in MATLAB for Non-Majors, with Media Computation and Peer Instruction.” ACM Technical Symposium on Computer Science Education (SIGCSE), 2013.
- Porter, Leo, **Cynthia Bailey Lee**, and Beth Simon. “Halving Fail Rates using Peer Instruction: A Study of Four Computer Science Classes.” ACM Technical Symposium on Computer Science Education (SIGCSE), 2013.
- Zingaro, Daniel, **Cynthia Bailey Lee**, and Leo Porter. “Peer Instruction in Computing: the Role of Reading Quizzes.” ACM Technical Symposium on Computer Science Education (SIGCSE), 2013.
- Porter, Leo, **Cynthia Bailey Lee**, Beth Simon and Daniel Zingaro. “Peer Instruction: Do Students Really Learn from Peer Discussion in Computing?” International Computing Education Research (ICER), 2011.
- Porter, Leo, **Cynthia Bailey Lee**, Beth Simon, Quintin Cutts and Daniel Zingaro. “Experience Report: A Multi-classroom Report on the Value of Peer Instruction.” Conference on Innovation and Technology in Computer Science Education (ITiCSE), 2011.
- Lee, Cynthia Bailey** and Allan Snaveley. “Precise and Realistic Utility Functions for User-Centric Performance Analysis of Schedulers.” IEEE International Symposium on High Performance Distributed Computing (HPDC), 2007.
- Lee, Cynthia Bailey** and Allan Snaveley. “On the User-Scheduler Dialogue: Studies of User-Provided Runtime Estimates and Utility Functions.” International Journal of High Performance Computing Applications, 2006.
- Lee, Cynthia Bailey**, Yael Schwartzman, Jennifer Hardy and Allan Snaveley. “Are user runtime estimates inherently inaccurate?” 10th Job Scheduling Strategies for Parallel Processing (JSSPP), in conjunction with SIGMETRICS, 2004.
- Carrington, Laura, Nicole Wolter, Allan Snaveley and **Cynthia Bailey Lee**. “Applying an Automated Framework to Produce Accurate Blind Performance Predictions of Full-Scale HPC Applications.” Department of Defense User's Group Conference, Williamsburgh, 2004.
- Allan Snaveley, Xiaofeng Gao, **Cynthia Lee**, Nicole Wolter, Jesus Labarta, Judit Gimenez and Philip Jones. “Performance Modeling of HPC Applications.” Parallel Computing: Software Technology, Algorithms, Architectures and Applications, PARCO 2003.

## PROFESSIONAL ACTIVITIES

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Workshop organizer: “Technical Interview Preparation” at Richard Tapia Conference (September 2017, September 2016), “New CS Faculty Teaching Workshop” (August 2017, July 2016, July 2015), “Evidence Based Teaching Practices” at SIGCSE (March 2017), “Peer Instruction” SIGCSE (March 2016), “Peer Instruction in Computer Science” C2Gen workshop program (September 2015), “Peer instruction for university computer science faculty” Chautauqua workshop program (July 2015, July 2014), “Teaching for Faculty in the Geosciences” (January 2015), “Peer Instruction in CS: Introduction and Recent Developments” SIGCSE (March 2013), Monash University Faculty Professional Development (November 2012), “Peer instruction in the CS classroom: a hands-on introduction” SIGCSE (March 2012)

Guest Speaker: “Effective Teaching Tactics” Grace Hopper Celebration (October 2017), Stanford Society of Latino Engineers annual banquet keynote (June 2017), “Handling Very Large Lecture Courses: Keeping the Wheels on the Bus III” SIGCSE Birds of a Feather (March 2017), University of Utah Colloquium (October 2016), Brigham Young University Colloquium (September 2015), University of New Orleans faculty professional development (July 2015), College Board AP Computer Science Professional Night (June 2015), SIGCSE Birds of a Feather (March 2015), Girl Code Stanford University summer camp (July 2014), Consortium for the Computing Sciences in Colleges-Southwest (March 2013), Grace Hopper Celebration of Women in Computing (October 2013), UCSD Jacobs School of Engineering Quarterly Chairs Meeting (March 2012), UCSD Computer Science Freshmen Seminar (2012), UCSD Teaching Methods in Computer Science course (2011), International Computing Education Research Conference Lightning Talks (2011), UCSD Summer Graduate Teaching Fellows Seminar Series (2008), Supercomputing Doctoral Research Showcase (2007), Supercomputing Birds of a Feather (2006)

Reviewer: ICER 2017, SIGCSE 2017, SIGCSE 2016, Grace Hopper Conference 2015, ICER 2015, SIGCSE 2015, ITiCSE 2015, ICER 2014, ACM Transactions on Computing Education 2014, ITiCSE 2013, SIGCSE 2013, Computer Science Education 2012, SIGCSE 2012, ITiCSE 2012, IEEE Transactions on Parallel and Distributed Systems 2010, Annals of Operations Research 2007, International Journal of High Performance Computing Applications 2006, ACM Euro-Par 2005

Conference Chair, Southwest Region Conference of the Consortium for Computing Sciences in Colleges (2016); Chair for Workshops and Tutorials (2017); Chair for Lightning Talks (2015)

Instructor, Stanford Summer Engineering Academy (SSEA) program for incoming Stanford freshmen (2017, 2016, 2015); Faculty consultant, CSI-LEAD Stanford summer program for high school students (2015)

Co-chair of Women in Computing @ UCSD; Founding undergraduate co-chair and later the graduate co-chair

Co-chair of Demonstrations, 13th IEEE International Symposium on High-Performance and Distributed Computing (HPDC) 2004

## MEDIA

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Guest on KUER’s Radio West program

Work featured in: [The Economist](#), [PBS Mind Shift](#), [Design Mom](#), [Computing Education Blog](#), [Daily Herald](#), [Women of Silicon Valley](#)

## AWARDS AND HONORS

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ACM SIGCSE Best Paper Award 2016

Professor of the Year, Stanford School of Engineering (Society of Women Engineers student-voted), 2015

Fellowships: UCSD Summer Graduate Teaching Fellow, National Science Foundation Graduate Research Fellowship (Honorable Mention), Grace Hopper Scholar, Cal-IT<sup>2</sup> Fellowship

Tau Beta Pi Engineering Honor Society