

# David G. Sullivan, Ph.D.

## *Curriculum Vitae*

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### **Office Address**

Department of Computer Science  
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### **Education**

Harvard University, Ph.D. in computer science, 2003  
Harvard University, S.M. in computer science, 1999  
Emmanuel College, coursework in education, 1993–1994  
Harvard College, A.B. in physics, 1991, cum laude in general studies

### **Professional Appointments**

2019–present Director of Peer Education and Assessment, Computer Science.  
*Oversee and extend the department's use of undergraduate course assistants and tutors, and coordinate the department's program assessments.*

2018–present Master Lecturer on Computer Science, Boston University, College of Arts and Sciences

2013–2018 Senior Lecturer on Computer Science, Boston University

2006–2013 Lecturer on Computer Science, Boston University

2000–present Instructor, Harvard University,  
Division of Continuing Education

Spring 2007 Lecturer on Computer Science, Tufts University

Fall 2006 Lecturer on Computer Science, Harvard University,  
Faculty of Arts and Sciences

2000–2005 Consultant, Sleepycat Software (now part of Oracle Corporation)

1999 Summer research intern, BBN Technologies, Cambridge, MA

1997–2003 Research assistant/teaching fellow, Harvard University

1991–1997 Teacher, St. John's Preparatory School, Danvers, MA

### **Honors**

Metcalf Award for Excellence in Teaching, Boston University, 2021  
Neu Family Award for Excellence in Teaching, Boston University, 2012  
Teaching Commendations, Harvard University Extension School, numerous semesters  
Certificate of Distinction in Teaching, Harvard University, 1999  
USENIX Association Scholar, 1999  
C.S. Gross Scholarship, Harvard Division of Engineering and Applied Sciences, 1998, 1999  
Harvard Graduate National Scholarship, 1997-1999  
Honorable Mention, NSF Graduate Fellowship Competition, 1998  
Phi Beta Kappa, Harvard College, 1991  
Detur Prize, Harvard College, 1987

## Teaching at Boston University

1. CS 105: Introduction to Databases and Data Mining
  - *Developed this course, which provides non-majors with a data-centric introduction to computer science, and taught its first offering in Spring '07.*
  - *Taught one section Fall and Spring semesters until 2017, and Fall semesters since then.*
  - *Shared materials with Olaf Hall-Holt at St. Olaf's College and Kevin Treu at Furman University for use in their courses.*
  - *In Spring '17, introduced the use of peer instruction and developed a series of pre-lecture videos that enable an increased level of student engagement in lecture.*
  - *In Fall '19, introduced the use of Gradescope for assignment submission, and wrote associated software that allows students to obtain preliminary feedback on their work.*
2. CS 111: Introduction to Computer Science I
  - *Taught one section in Fall '06, and multiple sections each Fall semester since then.*
  - *Taught one section Spring '08–'11, and two Spring sections since Spring '12.*
  - *In Spring '11, taught a special Honors Program section for Harleen Grewal '13.*
  - *In Spring '12, introduced a new undergraduate course assistant (CA) program in which undergrads assist with the weekly labs and offer regular office hours. I have continued to coordinate this program, and I have worked with colleagues to extend it to CS 112.*
  - *In Fall '14, transitioned to a new breadth-first curriculum that is a revised version of the CS-for-All curriculum developed at Harvey Mudd College.*
  - *In Fall '14, introduced the use of peer instruction to enable an increased level of student engagement in lecture.*
  - *In Fall '15, developed a series of pre-lecture videos that facilitate the use of peer instruction, and that allow students to more easily visualize the key concepts.*
  - *Shared materials with Dan Potter at Brown for use in his course (cs.brown.edu/courses/csci0040).*
  - *In Spring '19, introduced the use of Gradescope for assignment submission, and wrote associated software that allows students to obtain preliminary feedback on their work.*
3. CS 112: Introduction to Computer Science II
  - *Fall '06. Spring '18. Spring '20.*
  - *Developed a series of pre-lecture videos that facilitate the transition from Python (the language used in CS 111) to Java (the language used in CS 112).*
  - *In Fall '19, assisted Christine Papadakis-Kanaris with the adoption of Gradescope for assignment submission. In Spring '20, created additional associated software that allows students to obtain preliminary feedback on their work.*
  - *Shared materials with David Smith of Indiana University (PA) for use in his course.*
4. CS 460: Introduction to Database Systems
  - *Fall '13. Spring '19. Also taught the co-offered graduate version (CS 660) in Fall '13.*
  - *In Spring '19, introduced the use of Gradescope for assignment submission, and wrote associated software that allows students to obtain preliminary feedback on their work.*

## Other University Teaching (as the instructor of record)

1. CSCI S-111: Intensive Introduction to Computer Science, Harvard Summer School 2000-present. (Co-taught with Henry H. Leitner, Ph.D. until 2013)
2. CSCI E-50b: Introduction to Computer Science Using Java II, Harvard Extension School Spring '04.
3. CSCI E-22 (formerly CSCI E-119): Data Structures, Harvard Extension School Spring '05, '07, '08. Fall '05, '09–present.
4. CSCI E-66 (formerly CSCI E-268): Database Systems, Harvard Extension School Spring '06, Fall '06, Spring '11–present.

5. CS 165: Information Management, Harvard University, Faculty of Arts and Sciences  
*Fall '06.*
6. CS 115: Database Systems, Tufts University. *Spring '07.*

### **Departmental and University Service**

Member, Lecturer Promotion Committee, College of Arts and Sciences, 2019, 2021  
 Member, Ad-Hoc Curriculum Committee, Computer Science, 2019–present  
 Classroom observer for other lecturers, Computer Science, 2015–present  
 Member, search committees for full-time lecturers, Computer Science, 2013–present  
 Guest lecturer, BU Artemis Program (summer CS program for high-school girls), 2011–present  
 Advisor to Ph.D. students teaching computer science to high-school students, summer 2019  
 Coordinator, Undergraduate Course Assistant Program in Computer Science, 2012–2019  
 Member, Lecturer Merit Review Committee, Computer Science, 2019-2020  
 Member, Teaching Awards Committee, College of Arts and Sciences, 2019  
 Member, Premedical and Pre dental Advisory Board, Boston University, 2019  
 Chair, Ad-Hoc Committee on Tools for Teaching, Computer Science, 2018–2019  
*This committee's work led to the department's adoption of the Gradescope platform, which facilitates the grading of both exams and assignments. I have written associated software for each of my courses that allows students to obtain preliminary feedback on their work, and I have assisted colleagues in developing similar software for their courses. In Spring '19, I spoke to the Educational Technologies Governance Committee about this platform, and I have worked with colleagues from other departments who are considering the use of Gradescope in their courses.*

Member, Undergraduate Assessment Working Group, Provost's Office, 2016–2018  
 Member, Committee on Rethinking Entry Points to the CS Major, 2013–2015  
 Member, Undergraduate Curriculum Committee, Computer Science, 2013  
 Member, Committee on CS Courses for Non-Majors, 2011  
 Member, Committee on Redesigning CS 101 (RULE Grant), 2010  
 Member, Committee on the Transition from CS 111 to CS 112, 2009–2010  
 Member, Committee on Courses for Non-Majors, Fall 2007

### **Advising**

Supervisor/mentor to numerous teaching fellows at BU, including a number of novice teachers  
 Supervisor/mentor to numerous undergraduate course assistants for CS 111 and CS 112  
 Advisor/mentor to part-time and new full-time lecturers in the department  
 Advisor, Kilachand Keystone Project for Elizabeth James '20  
 Advisor to student researchers funded by a UROP Cross College grant, 2017–2019  
 Summer advisor for incoming students, 2008, 2009, 2011, 2015  
 Independent study advisor for Jason Abed '11, 2010  
 Thesis advisor for BU Academy students Daniel Housley (BUA '10) and Charles McGarey (BUA '14)

### **Invited Talks**

*Peer Instruction*, Computer Science Department, Boston University, October 26, 2018.  
*This talk was part of my larger efforts to encourage and assist members of the department in adopting peer instruction and other flipped-classroom methodologies.*

*Revamping the First Course for Majors: A Preliminary Report*, Computer Science Department, University of Massachusetts, Boston, March 26, 2015.

*Providing Students with Computational Tools for Working with Data*, Boston University Center for Excellence and Innovation in Teaching, January 10, 2013.

### **Educational videos**

- [1] David G. Sullivan. Pre-lecture videos for Computer Science 112, Boston University. <https://www.youtube.com/playlist?list=PLiwphLky56kA0uz5G3pR9VVrL1rNZsfOr>
- [2] David G. Sullivan. Pre-lecture videos for Computer Science 105, Boston University. [https://www.youtube.com/playlist?list=PLiwphLky56kCx\\_ir3wMiEbWSK6K6hklrd](https://www.youtube.com/playlist?list=PLiwphLky56kCx_ir3wMiEbWSK6K6hklrd)
- [3] David G. Sullivan. Pre-lecture videos for Computer Science 111, Boston University. [https://www.youtube.com/playlist?list=PLiwphLky56kCtBEOTihpmm6GFJdB7\\_M3B](https://www.youtube.com/playlist?list=PLiwphLky56kCtBEOTihpmm6GFJdB7_M3B)
- [4] David G. Sullivan. Video notes for Y. Daniel Liang's *Introduction to Programming Using Python* (Pearson, 2011).

## Publications

- [1] David G. Sullivan. A data-centric introduction to computer science for non-majors. In *Proc. of the 44th ACM Technical Symposium on Computer Science Education (SIGCSE '13)*, 2013, pp. 71-76.
- [2] David G. Sullivan, Margo I. Seltzer, and Avi Pfeffer. Using probabilistic reasoning to automate software tuning. *ACM SIGMETRICS Performance Evaluation Review* 32(1): 404-405.
- [3] David Gerard Sullivan. Using probabilistic reasoning to automate software tuning. Ph.D. thesis, Harvard University, September 2003.
- [4] Barbara J. Grosz, Sarit Kraus, David G. Sullivan, and Sanmay Das. The influence of social norms and social consciousness on intention reconciliation. *Artificial Intelligence* 142(2002):147-177.
- [5] David G. Sullivan and Margo I. Seltzer. Isolation with flexibility: a resource management framework for central servers. In *Proc. of the 2000 USENIX Annual Technical Conference*, 2000, pp. 337-350.
- [6] David G. Sullivan, Barbara J. Grosz, and Sarit Kraus. Intention reconciliation by collaborative agents. In *Proc. of the 4th International Conference on Multi-Agent Systems*, 2000, pp. 293-300.
- [7] David G. Sullivan, Alyssa Glass, Barbara J. Grosz, and Sarit Kraus. Intention reconciliation in the context of teamwork: an initial empirical investigation. In Klusch, M., Shehory, O., Weiss, G., eds., *Cooperative Information Agents III, Lecture Notes in Artificial Intelligence* 1652, 1999, pp. 149-162.
- [8] David G. Sullivan, Robert Haas, and Margo I. Seltzer. Tickets and currencies revisited: extending multiresource lottery scheduling. In *Proceedings of the 7th Workshop on Hot Topics in Operating Systems*, IEEE Computer Society Press, 1999, pp. 148-152.

## Other Relevant Experience/Credentials

Advisor, Excel Academy Charter High School, East Boston. 2019–2020

*Assisting Brad Lewis '14 and his colleagues in building a new computer science course.*

Edits and revisions to the textbook *CS for All* (<https://www.cs.hmc.edu/csforallbook>)

Textbook reviewer, Addison-Wesley, John Wiley & Sons, Pearson

Teaching consultant, Bok Center for Teaching and Learning, Harvard University, 1999–2002

Non-resident tutor, Pforzheimer House, Harvard University, 1999–2002

Co-moderator, First-Year Sexual Orientation Discussion Group, Harvard, 2000–2003

Massachusetts Educator's License, secondary-school mathematics and physics