

David B. Levine
davidlevine.b@gmail.com
1 Forest View Dr.
Falmouth, ME 04105
(716) 790-0975

Education

Ph.D., Dartmouth College. Department of Mathematics and Computer Science. Dissertation title: "The Pairwise Intersection Problem for Monotone Polygons", 1986.
A.M., Dartmouth College. Department of Mathematics and Computer Science. Special area of study was computer science, 1982.
B.A., Swarthmore College. Major in mathematics, minor in physics, 1980.

Employment History

Professor of Computer Science (Part-time), University of Southern Maine, 2022-present
Professor of Computer Science, St. Bonaventure University, 2002-2019; department chair 2003-2006; 2012-2013.
Associate Professor of Computer Science, St. Bonaventure University, 1998-2002.
Assistant Professor of Computer Science, Gettysburg College, 1991-1998.
Assistant Professor of Computer Science, Williams College, 1985-1991.
Consulting Member of the Technical Staff, AT&T Bell Labs, 1988-1989.
Graduate Assistant, Joint MAA/ACM Institute For Retraining In Computer Science, Clarkson University, 1984.
Instructor, Dartmouth College, 1983-1984.

Awards

Junior Faculty Award for Professional Excellence, St. Bonaventure University, May 2001.

Publications

"If You Can't Beat 'Em, Conscript 'Em: Experiences Requiring the Use of AI in a Capstone Course, Proceedings of the 57th SIGCSE Technical Symposium on Computer Science Education, Saint Louis, MO, February 2026; accepted for publication – page numbers unknown at this time.

"Large Language Models and Introductory Lab Exercises: Susceptibility, Resistance, and Potential", with Devin Chamberlain, Abigail Pitcairn, Nicholas Snow, and Benjamin Sweeney, Journal of Computing Sciences in Colleges (Papers of the 29th Annual CCSC Northeastern Conference), Brockport, NY, April 2025, pp. 49-63.

"XP Practices Applied to Grading", with Henry Walker, Proceedings of the ACM Technical Symposium on Computer Science Education, February 2006, pp. 173-177.

5 Steps to a 5: AP Computer Science, with Kathleen Larson, McGraw-Hill, New York, 2005, 362 pages, ISBN 0-07-143711-8.

"Adding Objects to the Traditional ACM Programming Contest", with Steven Andrianoff and Dalton Hunkins. Proceedings of the ACM Technical Symposium on Computer Science Education, February 2004, pp. 105-109.

"A Testing-Based Framework for Programming Contests", with Steven Andrianoff, Steven Gewand '04, and Greta Heissenberger '05, Proceedings of the Eclipse Technology eXchange at OOPSLA 2003, Anaheim, CA, pp. 96-100.

"A Unifying Introduction to the Field of Computer Graphics", with Dalton Hunkins. Proceedings of the SIGGRAPH 2003 Conference, San Diego, CA, July 2003.

"A Robust Mapper of Unknown Environments", with Robert Harlan, Joshua Goodberry, Mike Neel and Brian Zimmel. Technical report only.

"Role Playing: Easing the Paradigm Shift", with Steven Andrianoff and Joseph Bergin. Proceedings of the OOPSLA Educators' Symposium, Seattle, WA, November 2002, pp. 8-13.

"Additional Rich Resources for Computer Graphics Educators", with Dalton Hunkins. *Computers and Graphics*, Vol. 26, No. 4, August 2002, pp. 609-614.

"Role Playing in an Object-Oriented World", with Steven Andrianoff. Proceedings of the ACM Technical Symposium on Computer Science Education, February 2002, pp. 121-125.

"Rich Resources for Computer Graphics Education", with Dalton Hunkins. SIGGRAPH 2001 Educators Forum, Los Angeles, August 2001, pp. 45-48.

"The Khepera Robot and the kRobot Class: A Platform for Introducing Robotics in the Undergraduate Curriculum", with Robert Harlan and Shelley McClarigan, Proceedings of the ACM Technical Symposium on Computer Science Education, February 2001, pp. 105-109.

"Accomplishing More by Doing Less: Lessons from Spanish Language Instruction", with Kerr Thompson, Proceedings of the WebNet 2000 Conference (available on CD from AACE), San Antonio, October 2000.

"Why Johnny Can't (or Won't) Draw", Proceedings of the Eastern Small College Computing Conference, Scranton, PA, October 2000, pp. 161-166.

"Helping Students Through Multiplicities", The Journal of Computing in Small Colleges, Vol. 15, No. 5, May 2000, pp. 285-291.

"Windows into Mathematical Minds", a book review of Fermat's Enigma, *Science*, March 6, 1998, p. 1485.

"Timer Classes - Source Code", released as part of the results of the 1995 NSF Workshop on C++ Tools and Classes for First Year Courses, <http://cs.colgate.edu/faculty/nevison.pub/OOPTools/Timers/Timers.htm> (valid 7/24/2001).

"The Art and Science of Computer Graphics: A Very Depth-First Approach to the Non-Majors Introduction to Computer Science", with Donald House, Proceedings of the ACM Technical Symposium on Computer Science Education, March 1994, pp. 334-338.

"Many Objects in a Maze - A series of laboratory exercises using abstraction", released as part of the results of the 1993 NSF Workshop on Modules for Teaching Object Oriented Programming, <ftp://cs.colgate.edu/pub/oop/cpp/Levine.tar.Z> (valid 1/2/97).

"Dealing with Different Levels of Abstraction in a Data Structures Course", Proceedings of the ACM Technical Symposium on Computer Science Education, February 1993, pp. 261-264.

"Contours of Constructive Hypertext", with Mark Bernstein and Michael Joyce, ECHT '92 - Proceedings of the ACM Conference on Hypertext, December 1992, Milan, Italy, pp. 161-170.

"Fast Linear Expected-Time Algorithms For Computing Convex Hulls and Maxima", with Jon Bentley and Ken Clarkson, Proceedings of the First Symposium on Discrete Algorithms, 1990, pp. 179-187; revised and expanded version found in *Algorithmica*, Vol. 9, No. 1, 1993, pp. 168-183.

"Computer Science: A Second Course in Modula-2: Instructor's Guide", with Alan Tucker, McGraw Hill, 1988. ISBN 0-07-065445-X.

"Some Algorithms for Covering Problems", with William Lenhart, Michael McDougall, and Scot Drysdale, Williams College Technical Report CS-87-01.

"The Pairwise Intersection Problem for Monotone Polygons", Williams College Technical Report MS-86-05.

"Reporting Intersections Among Lists of Disjoint Polygons", Williams College Technical Report MS-86-04.

"On Oracles: Primitive Algorithms for Curved-Edged Objects", with Edward Stein, Williams College Technical Report MS-86-03.

"A Simple Method for Computing the Roots of Quartic Equations", with Edward Stein, Williams College Technical Report MS-86-02.

"The Pairwise Intersection Problems for Monotone Polygons", Ph.D. thesis, Dartmouth College, 1986.

Grants Written/Received

Educator's Scholarship, OOPSLA Conference (San Diego, CA). Award was approximately \$2000. (2005)

IBM Scholars Program – Eclipse Innovation Grant. Co-author (with Steve Andrianoff) of a proposal to create a framework to introduce testing into the introductory computer science curriculum. Award was for \$25,000. (2003)

Educator's Scholarship, OOPSLA Conference (Anaheim, CA). Award was approximately \$2350. (2003)

IBM Scholars Program – Eclipse Innovation Grant. Co-author (with Steve Andrianoff) of a proposal to create a programming contest framework within the Eclipse system. Award was for \$28,000. (2002)

Educator's Scholarship, OOPSLA Conference (Seattle, WA). Award was approximately \$2350. (2002)

Keenan Grant (St. Bonaventure University). Co-author with Ted Georgian of a proposal to create a series of laboratory exercises for a new course in Geographical Information Systems. Award was for \$2,000. (2001)

National Science Foundation. Co-investigator for NSF Computer Science, Engineering, and Mathematics Scholarship (CSEMS) grant number DUE-0123027, to create a scholarship program for talented students at St. Bonaventure University. (2001)

National Science Foundation. Co-author and co-investigator for NSF CCLI-Adaptation and Implementation grant number DUE-9980999, to create an undergraduate robotics library including sufficient software support for the robots to be used in a variety of courses. (1999)

Gettysburg College Grants Advisory Commission. Upon two occasions received support to develop software for an introductory-level graphics course. (1993)

Sloan Foundation New Liberal Arts Program. Received support to develop labs for a new, non-majors course in computer science. (1989)

National Science Foundation. Williams College SMALL Geometry Project. Was principal author of the grant, one of only three sites in the nation funded for more than one year under the NSF's Research Experiences for Undergraduates program. The grant, DMS - 8900348, was funded for a total of \$64,000. (1989)

Williams College Class of 1941 Fellow. Received support for a research leave during the 1988-1989 academic year.

Research Interests

Theoretical and empirical analysis of algorithms, especially as related to robotics and computational geometry; design and analysis of large hypertext systems; computer science education; and object-oriented techniques.

Undergraduate Research Advised

Coty Collins '12 - Spring 2011-Spring 2013. Coty greatly enhanced the Sort Detective program I wrote years ago and developed a tool that lets professors create their own custom versions without having to modify any of the source code at all. This work was presented at CCSCNE 2011 as a student poster. More recently, he has extended the work of Dan Eiseman's project to improve the user interface and to permit more complex forms of testing. This work was presented at SIGCSE 2013 in Denver.

Daniel Eiseman '10 – Spring 2007- Spring 2010. Dan developed a graphical user interface to enable students to write simple tests without having to learn the syntax of testing systems such as JUnit in advance. The system also permits tests to allow for some “fuzziness” in the answers. Dan presented his work at SIGCSE 2010 and was selected as one of the five best student posters, giving him the opportunity to speak in special session on the last day of the conference.

Richard Zuber '07 – Academic Year 2006-07. Rick developed and deployed SoundQ, a system for the production of sounds during a theater presentation. The system was designed to make the operation of the sound board as similar as possible to the operation of the light board.

Steven Gewand '04 and Paul Wager '06 – Summer 2004. Funded by an Eclipse Innovation Grant, these students developed more tools to aid in the introduction of the concept of automated testing into the undergraduate computer science curriculum.

Steven Gewand '05 and Greta Heissenberger '05 – Summer 2003. Funded by an Eclipse Innovation Grant, these students developed SBUit and the Corona Wizard, software to permit automated, data-secure judging of programming contest submissions.

Jamie Casilio '03, Matt Cowles '03 – Summer 2002. Also, Josh Goodberry '02, Michael Neel '02, Brian Zimmer '02 – Summer 2001. Funded by an NSF grant and working with Bob Harlan and myself, these students implemented various strategies for robot exploration of unknown environments.

Matthew Hartloff '00 – Spring 2000 – Under my joint supervision with Dalton Hunkins, Matt did early development work on a set of tutorials which were ultimately part of a SIGGRAPH presentation.

Jamison DeLorenzo '99 - Fall 1997 - Jamison developed a Java program, which uses a genetic algorithm to solve the Point Feature Label Placement problem for maps.

Kristopher Denio '96 - Fall 1993 - Kris built upon the work of Eppinger, conducting empirical experiments on the effects of random insertions and deletions in binary trees. As part of this work, he also developed an algorithmic experimentation system that allows careful investigation of the behavior of many different algorithms. Kris presented his work in the form of a poster at the ACM's Computer Science Conference, Nashville, February 1995.

Robert Allen '90, Michael Cox '91, Michael Donofrio '91, Jay Emerson '92, Keith Faigin '92, Kathi Fisler '91, Michael Gray '91, Nick Hodges '91, Baird Jarman '92, Rajiv Kochar '91, Michael McDougall '88, Vicente Medrano '92, and Joshua Smith '91 - Summers 1988-1990 – As part of the SMALL Geometry Project at Williams, these thirteen students overhauled a program known as ged, a geometer's workbench. The program allows its user to input, edit, and manipulate (through other programs) geometric arrangements and graphs.

Michael McDougall '88 - Summer 1987 - As a part-time assistant, Michael helped to test some conjectures about binary tree algorithms. He also proofread a paper in progress and, as a result, helped to establish certain results concerning arrangements of rectangles on a desktop.

Edward Stein '87 – Summer 1986 - Ed implemented several of the algorithms from my dissertation and explored generalizations where the edges of the polygons were replaced by certain types of curves.

Panel/Workshop Presentations

“The Queen of Code”, presented at the Seventh Annual Western NY CSTA conference, Buffalo, NY, October 2015.

“Crowd Sourcing Error Messages for Code.org”, presented at the Sixth Annual Western NY CSTA conference, Buffalo, NY, October 2014.

"Online Courses and What They Offer the K-12 Computer Science Teacher", presented at the Fourth Annual Western NY CSTA conference, Buffalo, NY, October 2012.

“Over 25 Years of Outreach Programs at Saint Bonaventure University: High School Programming Contest and Girls Day”, co-presented with Steve Andrianoff at the First Annual Western NY CSTA conference, Buffalo, NY, October 2009.

“Teaching Logical Skills Early”, one of four panelists presenting at the First Annual Western NY CSTA conference, Buffalo, NY, October 2009.

“Day One of the Objects-First First Course: What To Do”, Proceedings of the ACM Technical Symposium on Computer Science Education, March 2007, pp. 264-265.

“Test Me”, Part of the Nifty Assignments Panel, Proceedings of the ACM Technical Symposium on Computer Science Education, February 2005, p. 371.

“Role Playing in the Computer Science Classroom”, Computer Science and Information Technology Forum, ACM SIGCSE Technical Symposium, Norfolk, VA, March 2004.

“Role Playing in the Computer Science Classroom”, Chapman University AP High School Teachers Conference, Orange, CA, November 2003.

“Role Playing and the Java Marine Biology Simulation”, Computer Science and Information Technology Forum, NECC, Seattle, WA, June 2003.

“Role Playing for AP Consultants”, Part of the “Train the Trainers” workshop sponsored by the College Board, Pittsburgh, PA, July 2002.

“The Sort Detective”, Part of the Nifty Assignments Panel, Proceedings of the ACM Technical Symposium on Computer Science Education, February 2002, p. 320.

“Hiring and Retaining Faculty in Small College Computing Programs”, Consortium for Computing at Small Colleges – Northeastern Conference (Panel discussion), Middlebury, VT, April, 2001.

“An Undergraduate Robotics Laboratory”, NSF CCLI Project Showcase (at SIGCSE 2001), Charlotte, NC, February, 2001.

“What Is Essential to Teach to Students Entering the Field of Computer Science?” Consortium for Computing in Small Colleges – Northeast Regional Conference (Panel discussion), Providence, RI, April 1999.

College Board, "Advanced Placement Computer Science, 1998 and Beyond", Pace University, December 1997. (About a dozen similar ones in subsequent years.)

College Board, "Training the trainers for APCS in C++", Clemson University, June 1997.

"Sharing Secret Knowledge", MathCon '97, Cedar Crest College, April 1997.

NSF/Hamilton College, Using C++ in CS1 Workshop, Hamilton College, June 1996.

NSF/Colgate University, Object-Oriented Programming Workshop, Colgate University, June 1995.

Interdisciplinary Lively Applications Projects (ILAPs), Math Association of America Sectional Workshop, Messiah College (PA), June 1995.

"Object-Oriented Programming: How to 'Scale Up' CS1", ACM Technical Symposium on Computer Science Education (Panel Discussion), Phoenix, March 1994.

"Many Objects Doth a Maze Make", Object-Oriented Computing Curriculum Development Workshop, Colgate University, July 1993.

"Demanding Less and Getting More: Experiences in the Introductory Courses", New England College Undergraduate Science Education Program, Focus group on computer science, Trinity College, January 1991.

"GED: Using a Graph Editor to Learn About Mathematics and Computer Science", IBM/MAA Celebration of Mathematical Software, Mt. Holyoke College, June 1990.

"Faster, Fairer, and More Consistent Grading Using Techniques From the Advanced Placement Reading", ACM Technical Symposium on Computer Science Education (Panel discussion), Washington, DC, February, 1990.

Other Experience

Educational Testing Service. Consultant for the Major Field Exam in Computer Science, 2005-2007.

Eastgate Systems, Inc., Watertown, MA. Serving as a member of the Board of Directors, and Consulting Scientist, 1983-present.

Educational Testing Service. Performing various work concerning the Advanced Placement Computer Science Exam. Served as Faculty Consultant from 1987-92; Question Leader 1993-1998; Exam Leader 1999-2004; Standards Setting 2016, Reader 2019, Table Leader 2020-2022.

College Board. Consultant for the AP program, 1997-2004.

International Bureau of Software Testing. Reviewed technical manuscripts and certified small software packages, 1982-1985.

Systems Programmer. Worked on various projects at Swarthmore College (1978-1980) and implemented the pre-defined pictures for Dartmouth College's BASIC7 graphics package (1982-1984).

Conference Committee Work

SIGCSE Technical Symposium. Reviewer (12 years), Associate Program Chair (8 years, including 2021)

ITiCSE Conference. Reviewer (6 years), Associate Program Chair (2017, 2018, 2019)

E-Learn (and predecessor) Conferences (AACE), Program Committee member (20 years)

CCSC-NE. Reviewer (14 years), Papers Chair (2001)

CCSC-E. Reviewer (7 years), Local Chair (1999)

Societies and Interests

I am a member of the ACM and SIGCSE.

I am a member of the Consortium for Computing in Small Colleges.

I am a member of the Computer Science Teachers' Association and served as Treasurer for the Western NY Chapter of the CSTA from 2009-2019.

I serve as a tax aide for AARP, helping citizens throughout southern Maine file federal and state income tax returns.

I am an avid disc golfer, a section hiker of the Appalachian Trail, a part-time orienteer/adventure racer, and a retired ultimate frisbee player.

References

References will be furnished upon request.