

Curriculum Vitæ

Michael Herbert Goldwasser

(November 2023)

CONTACT INFORMATION

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BRIEF BIOGRAPHY

Michael H. Goldwasser is a Professor of Computer Science at Saint Louis University. He served as the inaugural Chair of the newly formed Department of Computer Science from 2016–2022, and had previously served six years as the Director of Computer Science within a joint Department of Mathematics and Computer Science. He led the computer science program through a period of tremendous growth, which included a 136% increase in undergraduate enrollments, the launch of four new graduate programs which in five years have grown to a vibrant enrollment of more than 300 students, the launch of two interdisciplinary programs (an MS in Bioinformatics and a BS in Data Science), an increase in annual research expenditures from \$171K to \$925K, and an increase in the department faculty from 7 to 18 full-time positions (who support and enable such growth). Dr. Goldwasser’s research interests are in the design and analysis of algorithms, with particular focus in the area of online computation and approximation algorithms, with applications in scheduling and bioinformatics. He is also active in the Computer Science education community and the author of four undergraduate textbooks.

EDUCATION

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| Saint Louis University , St. Louis, Missouri | |
| Coursework toward Masters in Business Administration (business analytics, advanced business analytics, management) | Fall 2022–present |
| Stanford University , Stanford, California | |
| Ph.D. in Computer Science (with <i>distinction in teaching</i>) Dissertation: Complexity Measures for Assembly Sequencing Advisor: Professor Rajeev Motwani | September 1997 |
| Brown University , Providence, Rhode Island | |
| Sc. B. in Mathematics & Computer Science (<i>magna cum laude</i>) Advisor: Professor Roberto Tamassia | June 1991 |
| Ladue School District , St. Louis, Missouri | |
| Horton Watkins High School | 1983–1987 |
| Ladue Junior High School | 1981–1983 |
| Spoede Elementary School | 1974–1981 |

PROFESSIONAL EXPERIENCE**Saint Louis University**, St. Louis, Missouri

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|---|--------------------|
| Professor | Jul 2011–present |
| Chair of Department of Computer Science | Jul 2016–June 2022 |
| Director of Computer Science (within Department of Math/CS) | Jul 2010–June 2016 |
| Associate Professor | Jul 2006–Jun 2011 |
| Assistant Professor | Aug 2003–Jun 2006 |

Loyola University, Chicago, Illinois

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| Assistant Professor, Department of Computer Science | Jul 2002–Jun 2003 |
| Undergraduate Program Director for Computer Science | Jul 2000–Jun 2002 |
| Assistant Professor, Dept. of Mathematical and Computer Sciences | Aug 1999–May 2002 |

Colorado College, Colorado Springs, Colorado

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| Visiting Assistant Professor, Division of Natural Science | summer 2002 |
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Princeton University, Princeton, New Jersey

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| Department of Computer Science, Lecturer | Aug 1997–May 1999 |
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DIMACS, Center for Discrete Math. and Theoretical Computer Science

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| Postdoctoral Fellow | Aug 1997–May 1999 |
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Stanford University, Stanford, California

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| Department of Computer Science, Teaching Fellow | 1997 |
| Department of Computer Science, Teaching and Research Assistant | 1992–1997 |

Brown University, Providence, Rhode Island

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| Department of Computer Science, Teaching Assistant | 1988–1991 |
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Previous Internships

IBM Almaden Research Center (1996), Digital System Research Center (1992), Sun Microsystems (1991), Microsoft Corporation (1990), Central Insitute for the Deaf at Washington University (1988,1989).

MAJOR ADMINISTRATIVE ACCOMPLISHMENTS

- Advocated for the creation of an independent Department of Computer Science, launched in July 2016 (previously part of a Department of Mathematics and Computer Science).
- Advocated for and launched new academic programs:
 - MS in Bioinformatics and Computational Biology (jointly with Biology, Chemistry, Math/Stat) August 2015
 - MS in Computer Science August 2018
 - MS in Software Engineering August 2018
 - BS in Data Science (jointly with Math/Stat) August 2019
 - MS in Artificial Intelligence August 2020
 - PhD in Computer Science August 2021
- Represented Computer Science in the development and planning for a new 90,000 square foot *Interdisciplinary Science & Engineering Building*, opened in Summer 2020.

- Oversaw growth of CS-related programs, as evidenced by the following metrics:

| | Faculty FTE | Student Headcount (Fall census) | | | Female representation | | Credit hours taught (Fall) | Research expenditures |
|---------|-------------|---------------------------------|-----|-----|-----------------------|---------|----------------------------|-----------------------|
| | | BA/BS | MS | PhD | Faculty | Student | | |
| AY10-11 | 6.5 | 41 | | | 15% | 10% | 465 | (unknown) |
| AY15-16 | 7 | 101 | 4 | | 14% | 18% | 770 | \$171K |
| AY16-17 | 9 | 121 | 6 | | 11% | 20% | 876 | \$227K |
| AY17-18 | 9 | 131 | 11 | | 11% | 20% | 984 | \$294K |
| AY18-19 | 11 | 119 | 25 | | 18% | 20% | 1017 | \$417K |
| AY19-20 | 13 | 138 | 33 | | 23% | 19% | 1279 | \$906K |
| AY20-21 | 13 | 152 | 45 | | 23% | 21% | 1567 | \$923K |
| AY21-22 | 13 | 195 | 116 | 1 | 23% | 24% | 1953 | \$925K |
| AY22-23 | 18 | 239 | 305 | 3 | 27% | 29% | 3549 | |

AWARDS AND HONORS

- James H. Korn Scholarship of Teaching and Learning Award, (Saint Louis Univ.) 2008
- DIMACS Postdoctoral Fellowship 1997–1999
- Graduated with *Distinction in Teaching* (Stanford University) 1997
- Co-winner of *Best Paper Award* in AI/Feature-Based Design and Manufacturing, ASME International Computers in Engineering Conference 1995
- Graduated *magna cum laude* (Brown University) 1991
- Departmental Undergraduate Prize for Excellence in Computer Science

FUNDING

EXTERNAL

- “*Bioinformatics Training with Industry Support and Engagement.*” 2016–2022
\$649,681, National Science Foundation award DUE-1564894 from the S-STEM program. Michael H. Goldwasser (PI), Tae-Hyuk Ahn, Gerardo Camilo, Jack Kennell, David Letscher (coPIs).
- “*Silicon Mechanics Research Cluster Grant,*” 2012
HPC equipment valued at \$77,250, Silicon Mechanics
Gerardo Camilo, James Ginther, Michael Goldwasser, Justin Goodson, Charles Kirkpatrick, Michael Lewis, Mark McQuilling, Brent Znosko, Keith Hacke.
- “*Maximizing Resource Utilization through Admission Control,*” Aug. 2002–Aug. 2006
\$199,602, National Science Foundation awards CCR-0208987, CCR-0417368 from the CISE Theory of Computing Program, Michael H. Goldwasser (PI)

INTERNAL

- “*Big Idea Planning Grant: Artificial Intelligence at SLU.*” 2019–2020
\$20,000, SLU Research Institute.
Mamoun Benmamoun, Flavio Esposito, Michael H. Goldwasser, Srikanth Gururajan, Steven Smart (Investigators).

- “*Studying the Relationship Between Stress and Alcohol Use Among College Students with the Collection of Real-time Data.*” 2018–2019
\$42,737, SLU Presidential Research Fund
Enbal Shacham (PI), Michael H. Goldwasser, Tony Buchanan (coPIs).
- “*The Effect of Slack on Competitiveness for Admission Control,*” 2001
\$6,000, Loyola University Summer Stipend award.

PUBLICATIONS

BOOKS

- [1] Michael T. Goodrich, Roberto Tamassia, and Michael H. Goldwasser. *Data Structures & Algorithms in Java (Sixth Edition)*. Interactive “zyVersion” released by zybooks.com, March 2023. Print edition published by Wiley, 2014. ISBN: 978-1-118-77133-4. 736 pages.
- [2] Michael T. Goodrich, Roberto Tamassia, and Michael H. Goldwasser. *Data Structures & Algorithms in Python*. Interactive “zyVersion” released by zybooks.com, June 2023. Print edition published by Wiley, 2013. ISBN: 978-1-118-29027-9. 768 pages.
- [3] Michael T. Goodrich, Roberto Tamassia, David Mount, and Michael H. Goldwasser. *Data Structures & Algorithms in C++ (Second Edition)*, interactive “zyVersion” coming to zybooks.com, 2024. Print edition authored by Goodrich, Tamassia, and Mount and published by Wiley, 2011.
- [4] Michael H. Goldwasser and David Letscher. *Object-Oriented Programming in Python*. Prentice Hall, 2008. ISBN: 978-0-13-615031-2. 700 pages.

EDITED BOOKS

- [5] Michael H. Goldwasser, David S. Johnson, and Catherine C. McGeoch (Eds). *Data Structures, Near Neighbor Searches, and Methodology: Fifth and Sixth DIMACS Implementation Challenges*. Volume 59 of AMS-DIMACS book series, Dec. 2002.

JOURNAL ARTICLES

- [6] Michael H. Goldwasser and Mark Pedigo. “Online, Nonpreemptive Scheduling of Equal-Length Jobs on Two Identical Machines.” *ACM Transactions on Algorithms*, 5(1), 2:1–2:18, Nov. 2008.
- [7] Michael H. Goldwasser and Arundhati Bagchi Misra. “A Simpler Competitive Analysis for Scheduling Equal-length Jobs on One Machine with Restarts.” *Information Processing Letters*, 107(6):240–245, Aug. 2008.
- [8] Gagan Aggarwal, Qi Cheng, Michael H. Goldwasser, Ming-Yang Kao, Pablo Moisset de Espanes, and Robert T. Schweller. “Complexities for Generalized Models of Self-assembly.” *SIAM Journal of Computing*, 34(6):1493–1515, Dec. 2005.
- [9] Xin He and Michael H. Goldwasser. “Identifying Conserved Gene Clusters in the Presence of Homology Families.” *Journal of Computational Biology*, 12(6):638–656, Jul. 2005.

- [10] Michael H. Goldwasser, Ming-Yang Kao, and Hsueh-I Lu. “Linear-Time Algorithms for Computing Maximum-Density Sequence Segments with Bioinformatics Applications.” *Journal of Computer and System Sciences*, 70(2):128–144, Mar. 2005.
- [11] Michael H. Goldwasser and Boris Kerbikov. “Admission Control with Immediate Notification.” *Journal of Scheduling*, 6(3):269–285, May/Jun. 2003.
- [12] Michael H. Goldwasser. “Patience is a Virtue: The Effect of Slack on Competitiveness for Admission Control.” *Journal of Scheduling*, 6(2):183–211, May/Jun. 2003.
- [13] Michael H. Goldwasser and Rajeev Motwani. “Complexity Measures for Assembly Sequences.” *International Journal of Computational Geometry and Applications*, 9(4–5):371–417, Aug/Oct. 1999.

CONFERENCE AND WORKSHOP PROCEEDINGS (peer reviewed)

- [14] David P. Bunde and Michael H. Goldwasser. “Dispatching Equal-length Jobs to Parallel Machines to Maximize Throughput.” *Proceedings of the Twelfth Scandinavian Symposium and Workshop on Algorithm Theory (SWAT 2010)*, Bergen, Norway, Volume 6139 of Lecture Notes in Computer Science (Springer-Verlag), Jun. 2010, pp. 346–358.
- [15] Michael H. Goldwasser and David Letscher. “A Graphics Package for the First Day and Beyond.” *Proceedings of the 40th Annual SIGCSE Technical Symposium on Computer Science Education (SIGCSE 2009)*, Chattanooga, Tennessee, Mar 2009, pp. 206–210.
- [16] Michael H. Goldwasser and David Letscher. “Teaching an Object-Oriented CS1 — with Python.” *Proceedings of the 13th Annual Conference on Innovation and Technology in Computer Science (ITiCSE 2008)*, Madrid, Spain, Jun. 30– Jul. 2, 2008, pp. 42–46.
- [17] Michael H. Goldwasser and David Letscher. “Teaching Strategies for Reinforcing Structural Recursion with Lists.” *Companion to the 22nd Annual ACM SIGPLAN Conference on Object-Oriented Programming, Systems, Languages, and Applications (OOPSLA Educators’ Symposium)*, Montreal, Quebec, Canada, 2007, pp. 889–896.
- [18] Michael H. Goldwasser and David Letscher. “Introducing Network Programming into a CS1 Course.” *Proceedings of the 12th Annual Conference on Innovation and Technology in Computer Science (ITiCSE 2007)*, Dundee, Scotland, UK, Jun. 25–27, 2007, pp. 19–22.
- [19] Michael H. Goldwasser and Mark Pedigo. “Online, Non-preemptive Scheduling of Equal-Length Jobs on Two Identical Machines.” *Proceedings of the Tenth Scandinavian Workshop on Algorithm Theory (SWAT 2006)*, Riga, Latvia, Volume 4059 of Lecture Notes in Computer Science (Springer-Verlag), Jul. 2006, pp. 113–123. A journal version of this paper appears in *ACM Transactions on Algorithms* [6].
- [20] Michael H. Goldwasser and David Letscher. “Providing Students Universal Access to a Centralized, Graphical Computing Environment.” *Proceedings of the Tenth Annual Conference on Innovation and Technology in Computer Science (ITiCSE 2005)*, Monte da Caparica, Portugal, Jun. 27–29, 2005, pp. 79–83.
- [21] Xin He and Michael H. Goldwasser. “Identifying Conserved Gene Clusters in the Presence of Orthologous Groups.” *Proceedings of the Eighth Annual International Conference on Research in Computational Molecular Biology (RECOMB 2004)*, San Diego, California, Mar.

- 2004, pp. 272–280. A revised version of this paper appears in *Journal of Computational Biology* [9].
- [22] Gagan Aggarwal, Michael H. Goldwasser, Ming-Yang Kao, and Robert T. Schweller. “Complexities for Generalized Models of Self-Assembly.” *Proceedings of the 15th Annual ACM-SIAM Symposium on Discrete Algorithms (SODA 2004)*, New Orleans, Louisiana, Jan. 2004, pp. 880–889. A revised version of this paper appears in *SIAM J. Computing*. [8].
- [23] Michael H. Goldwasser, Ming-Yang Kao, and Hsueh-I Lu. “Fast Algorithms for Finding Maximum-Density Segments of a Sequence with Applications to Bioinformatics.” *Proceedings of the Second Workshop on Algorithms in Bioinformatics (WABI 2002)*, volume 2452 of *Lecture Notes in Computer Science* (Springer-Verlag), 2002, pp. 157–171. An improved version of this result appears in *Journal of Computer and System Sciences* [10].
- [24] Michael H. Goldwasser. “A Gimmick to Integrate Software Testing Throughout the Curriculum.” *Proceedings of the 33rd Annual SIGCSE Technical Symposium on Computer Science Education (SIGCSE 2002)*, Covington, Kentucky, Feb. 27–Mar. 3, 2002, pp. 271–275.
- [25] Adam L. Buchsbaum, Michael H. Goldwasser, Suresh Venkatasubramanian, and Jeffery R. Westbrook. “On External Memory Graph Traversal.” *Proceedings of the 11th Annual ACM-SIAM Symposium on Discrete Algorithms (SODA 2000)*, San Francisco, California, Jan. 2000, pp. 859–860.
- [26] Michael H. Goldwasser. “Patience is a Virtue: The Effect of Slack on Competitiveness for Admission Control.” *Proceedings of the Tenth Annual ACM-SIAM Symposium on Discrete Algorithms (SODA 1999)*, Baltimore, Maryland, Jan. 1999, pp. 396–405. A journal version of this paper appears in the *Journal of Scheduling* [12].
- [27] Michael H. Goldwasser and Rajeev Motwani. “Intractability of Assembly Sequencing: Unit Disks in the Plane.” *Proceedings of the Fifth Annual Workshop on Algorithms and Data Structures (WADS 1997)*, volume 1272 of *Lecture Notes in Computer Science* (Springer-Verlag), 1997, pp. 307–320. This result was later incorporated into a journal article [13].
- [28] Michael H. Goldwasser, Jean-Claude Latombe, and Rajeev Motwani. “Complexity Measures for Assembly Sequences.” *Proceedings of the 12th IEEE International Conference on Robotics and Automation (ICRA 1996)*, Minneapolis, Minnesota, Apr. 1996, pp. 1581–1587. This result was later incorporated into a journal article [13].
- [29] Bruce Romney, Cyprien Godard, Michael Goldwasser, and G. Ramkumar. “An Efficient System for Geometric Assembly Sequence Generation and Evaluation.” *Proceedings of the 15th ASME International Computers in Engineering Conference (CIE 1995)*, Boston, Massachusetts, Sep. 1995, pp. 699–712.

COMMUNICATIONS, DEMONSTRATIONS, POSTERS, etc. (peer reviewed)

- [30] Michael H. Goldwasser and David Letscher. Demonstration: “A Python Graphics Package for the First Day and Beyond.” *Proceedings of the 13th Annual Conference on Innovation and Technology in Computer Science (ITiCSE 2008)*, Madrid, Spain, Jun. 30–Jul. 2, 2008, p. 326.

- [31] Michael H. Goldwasser and David Letscher. Tutorial: “Teaching Object-Oriented Programming in Python” *Proceedings of the 12th Annual Conference on Innovation and Technology in Computer Science (ITiCSE 2007)*, Dundee, Scotland, UK, Jun. 25–27, 2007, pp. 365–366.
- [32] Michael H. Goldwasser and David Letscher. Tutorial at CCSC Central Plains Conference: “Teaching an Object-Oriented CS1 course in Python.” *Journal of Computing Sciences in Colleges*, 22(4):62–64, Apr. 2007.
- [33] Michael H. Goldwasser. Poster: “A Gentle Introduction to Linked Lists.” *34th Annual SIGCSE Technical Symposium on Computer Science Education (SIGCSE 2003)*, Reno, Nevada, Feb. 2003.
- [34] Chandra Chekuri, Michael H. Goldwasser, Prabhakar Raghavan, and Eli Upfal. Poster: “Web Search Using Automatic Classification.” *Sixth International World Wide Web Conference (WWW 1997)*, Santa Clara, California, Apr. 1997, Poster POS725.
- [35] Michael H. Goldwasser. Poster: “An Implementation for Maintaining Arrangements of Polygons.” *Proceedings of the 11th Symposium on Computational Geometry (SoCG 1995)*, Vancouver, British Columbia, Jun. 1995, pp. C32–33.

ADDITIONAL ARTICLES

- [36] Michael H. Goldwasser. “A Survey of Buffer Management Policies for Packet Switches.” *SIGACT News*, 41(1):100–128, 2010
- [37] Alison Young, Arnold Pears, Pedro de Miguel Anasagasti, Ralf Romeike, Michael Goldweber, Michael Goldwasser, and Vicki Almstrum. “Scrambling for Students: Our Graduates are Sexier than Yours.” *Proceedings of the 13th Annual Conference on Innovation and Technology in Computer Science (ITiCSE 2008)*, Madrid, Spain, Jun. 30–Jul. 2, 2008, pp. 333–334.
- [38] Michael H. Goldwasser and David Letscher. “Using Python to Teach Object-Oriented Programming.” *PyCon*, Chicago, Illinois, Mar. 2008.
- [39] Michael H. Goldwasser. “A Survey of Linear Programming in Randomized Subexponential Time.” *SIGACT News*, 26(2):96–104, Jun. 1995.

DISTRIBUTED SOFTWARE PACKAGES

- [40] `cs1graphics` is an object-oriented Python graphics module specifically designed for pedagogical use (see [15,30]). Available at <http://www.cs1graphics.org>.
- [41] `hteams` is a C program used for sequence analysis for bioinformatics (see [9,21]). Available at <http://cs.slu.edu/~goldwasser/homologyteams>.
- [42] `Gentle Introduction to Linked Lists` is a Java applet which provides an interactive activity for students, used in exploring and reinforcing conceptual material (see [33]). Available at <http://cs.slu.edu/~goldwasser/demos/linked>.
- [43] `autograde` is a Perl script which automates the execution of student programs on various test inputs provided by the instructor and other students (see [24]). The script is designed for use on a Unix/Linux system. Available at <http://cs.slu.edu/~goldwasser/autograde>.

- [44] **arrange** is a package for partially dynamic maintenance of arrangements of polygons on the sphere, with point location (see [35]). It also handles lines and line segments, as well as arrangements in the plane. It is included in the Stony Brook Algorithm Repository, where it is given a rating 9 of 10, and it is included in Nina Amenta's Directory of Computational Geometry Software. Available at <http://cs.slu.edu/~goldwasser/arrange>.

PRESENTATIONS AT PROFESSIONAL MEETINGS

- **AAAS/NSF S-STEM Symposium** – Washington, D.C. 12 September 2019
Poster: *Bioinformatics Training with Industry Support and Engagement*.
- **Midwest Bioinformatics Conference** – Columbia, Missouri 12 April 2018
Panelist: Regional Collaboration Discussion
- **SIGCSE** – Denver, Colorado March 2013
Poster: *Interactive Exploration of Huffman Coding*.
- **Lambda Lounge** – St. Louis, Missouri 2 September 2010
Invited Speaker: *Picking a Language for Teaching CS1*
- **SWAT** – Bergen, Norway 23 June 2010
Paper: *Dispatching Equal-length Jobs to Parallel Machines to Maximize Throughput*
- **PyCon** – Chicago, Illinois 26 March 2009
Tutorial: *Introduction to Object-Oriented Programming*
- **SIGCSE** – Chattanooga, Tennessee 6 March 2009
Paper: *A Graphics Package for the First Day and Beyond*
- **ITiCSE** – Madrid, Spain 30 June / 1 July 2008
Paper: *Teaching an Object-Oriented CS1 — with Python*.
Demonstration: *A Python Graphics Package for the First Day and Beyond*.
Panel: *Scrambling for Students: Our Graduates are Sexier than Yours*.
- **OOPSLA, Educators' Symposium** – Montreal, Quebec, Canada 22 October 2007
Paper: *Teaching Strategies for Reinforcing Structural Recursion with Lists*
Demonstration: *A Graphics Package for the First Day and Beyond*
- **SIGCSE** – Convington, Kentucky 9 March 2007
3-hour Workshop: *Teaching Object-Oriented Programming in Python*
- **MAPSP** – Siena, Italy 9 June 2005
Paper: *The Effect of Patience and Restarts for the Online Scheduling of Equal-Length Jobs*.
- **RECOMB** – San Diego, CA 30 March 2004
Paper: *Identifying Conserved Gene Clusters in the Presence of Orthologous Groups*.
- **Midwest Theory Day** – Chicago, IL 7 December 2002
Paper: *Linear-time Algorithms for Computing Maximum-density Sequence Segments with Bioinformatics Applications*.
- **SODA** – Baltimore, MD 18 January 1999
Paper: *Patience is a Virtue: the Effect of Slack on Competitiveness for admission control*.

- **CGC Workshop on Computational Geometry** – Baltimore, MD 11 October 1996
Paper: *Intractability of Assembly Sequencing, AND/OR Scheduling, and Removing a unit Disk.*
- **ICRA** – Minneapolis, MN 25 April 1996
Paper: *Complexity Measures for Assembly Sequences.*
- **SoCG** – Vancouver, British Columbia 5–7 June 1995
Poster: *An Implementation for Maintaining Arrangements of Polygons.*

COURSES TAUGHT

- **Saint Louis University** 2003–present
 - CSCI 1010: Introduction to Computer Science: Principles (4 times)
 - CSCI 1020: Introduction to Computer Science: Bioinformatics (2 times)
 - CSCI 1050: Introduction to Computer Science: Multimedia (2 times)
 - CSCI 1060: Introduction to Computer Science: Scientific Programming (1 time)
 - CSCI 1300: Introduction to Object Oriented Programming (4 credits) (16 times)
 - CSCI 1890: Object-Oriented Practicum (1 credit) (10 times)
 - CSCI 2100: Data Structures (4 credits) (10 times)
 - CSCI 2190: Computational Problem Solving (1 credit) (17 times)
 - CSCI 2300: Object-Oriented Software Design (2 times)
 - CSCI 3100: Algorithms (7 times)
 - CSCI 3710: Databases (2 times)
 - CSCI 3760: Artificial Intelligence (2 times)
 - CSCI 4930: Special Topics — Computational Geometry (1 time)
 - CSCI 4930/5930: Special Topics — Advanced Data Structures (1 time)
 - CSCI 4961/4962: Capstone Project (7 times)
- **Loyola University** 1999–2003
 - COMP 125: Introductory Programming (1 time)
 - COMP 150: Introduction to Computer Science (4 times)
 - COMP 271: Structured Programming & Data Structures (4 times)
 - COMP 363: Design and Analysis of Computer Algorithms (1 time)
 - COMP 460: Algorithms & Complexity (1 time)
- **Colorado College**
 - NS 121: Introduction to Digital Computing Summer 2002
- **Princeton University**
 - COS 423: Theory of Algorithms Spring 1998
 - COS 598f: Advanced Topics in CS — Randomized Algorithms Spring 1999
- **Stanford University**
 - CS 161: Algorithms and Data Structures Summer 1996

STUDENTS SUPERVISED

- Alec Dellios, Chris Dobsch, BS students, Saint Louis University 2021
Capstone Project – Clinical Nursing Scenarios
- Alvin Do, Metta Pham, Eric Quach, BS students, Saint Louis University 2019–2020
Capstone Project – COVID Tracking Dashboard
- Eric Adams, Adam Ezelgot, Alex Rapach, BS students, Saint Louis University 2018–2019
Capstone Project – Historic St. Louis website

- Jake Bernstein, Laurel Button, Emily Ferretti, BS students, Saint Louis University 2017–2018
Capstone Project – Digital History: Macelwane Cemetery Project
- Blake Braun, Ryan Murphy, Eric Ramos, BS students, Saint Louis University 2017–2018
Capstone Project – Technology Improvements for the SLU Ride Operations
- Alex Lambrecht and Samiksha Mailarpwar, BS students, Saint Louis University 2017–2018
Capstone Project – Real-time Mobile Survey of Social Science Research Participants
- Alex Lambrecht, BS student, Saint Louis University Spring 2017
Independent Study – Algorithms
- Nicholas Anderson, Joey Gao, Eric Whitman, BS students, Saint Louis University 2017
Capstone Project – Virtual Reality Drone Operator
- Brennan Govreau and Jordan Govreau, BS students, Saint Louis University 2016
Capstone Project – Graphical Modeling of Biological Systems in Education
- Matt Meyer and Luke Reichold, BS students, Saint Louis University AY2015–2016
Capstone Project – Monitoring Patients’ Cardiovascular Health via Common
Wearable Fitness Devices
- Dylan Lawrence, BS student, Saint Louis University Spring 2015
Independent Study – Computational Geometry
- Nick Lewchenko, BS student, Saint Louis University AY2014–2015
Capstone Project – Educational Animations and Interactives in HTML5/JavaScript
- Andrew Wiltz, BS student, Saint Louis University Spring 2014
Capstone Project – The Game Theory of Machine Scheduling
- Chris Porter, BA student, Saint Louis University AY2013–2014
Capstone Project – `cs1graphics`: A Case Study in Multithreaded Programming
- Michael Wagner, BS student, Saint Louis University AY2012–2013
Capstone Project – Exploring a Data Set with Derived Formulas
- Michael Schade and Xinnian Zheng, BS students, Saint Louis University Fall 2011
Independent Study – Computational Geometry
- Cory Lampkin, BS student, Saint Louis University Fall 2011
Capstone Project – Online Survey Software
- Rebecca Asbury, BA student, Saint Louis University Spring 2011
Capstone Project – Improved E-Prime Scripting Environment
- Peter Zylka, BS student, Saint Louis University Spring 2011
Capstone Project – Analysis of Algorithms Using Game Theory
- Ian Schillebeeckx, BS student, Saint Louis University Fall 2010
Capstone Project – Stock Prediction with Neural Networks
- Mary Ezzelgot, BS student, Saint Louis University Fall 2010
Capstone Project – e-Commerce for a Building Supply Company
- Sam Jantz, BS student, Saint Louis University Spring 2010
Capstone Project – Evaluating Speech Recognition Systems
- Charlie Andrus, BS student, Saint Louis University Spring 2009
Capstone Project – iPhone Support for Medical Applications

- Algorithm Design*, Kleinberg and Tardos (Addison Wesley) 2008
 CS0 text, unpublished (Pearson Education) 2005
Explorations in Computer Science: A Guide to Discovery, Meyer (Jones & Bartlett) 2002
Introduction to Algorithms, Cormen, Leiserson, Rivest, Stein (McGraw Hill) 1998
- **Birds-of-a-Feather Organizer**
Python in Education, 40th Annual SIGCSE Technical Symposium on Computer Science Education, Chattanooga, Tennessee 5 March 2009
 - **Program Committee Member**
 First International Conf. on Algorithmic Applications in Management (AAIM) 2005
 - **Session Chair**
 35th Annual SIGCSE Technical Symposium on Computer Science Education, St. Louis, Missouri Feb. 2005
 - Sixth DIMACS Implementation Challenge on Near-Neighbor Searches
Challenge Coordinator and Steering Committee member 1998–2000
Workshop Coordinator 15 January 1999
 - **Referee** of technical papers for:
 ACM Journal on Educational Resources in Computing (1), ACM Symposium on Computational Geometry (2), ACM/SIAM Symposium on Discrete Algorithms (5), ACM Symposium on Parallelism in Algorithms and Architectures (1), ACM Symposium on Solid Modeling and Applications (1), ACM Symposium on the Theory of Computation (7), ACM Transactions on Algorithms (1), SIAM Journal on Discrete Mathematics (1), Algorithmica (9), Asian Computing Science Conference (1), ASME J. of Manufacturing Sciences and Engineering (1), Computers & Industrial Engineering (1), Euro-Par (1), European Symposium on Algorithms (2), IEEE Infocom (1), IEEE Transactions on Computational Biology and Bioinformatics (2), IEEE Transactions on Robotics and Automation (2), Information Processing Letters (6), Int. Conf. on Algorithms and Complexity (1), ITiCSE Conference on Innovation and Technology in Computer Science Education (8), J. of ACM (1), J. of Algorithms (1), J. of Scheduling (4), Latin American Symposium on Theoretical Informatics (1), SIAM J. of Computing (5), SIGCSE Technical Symposium on Computer Science Education (27), Theoretical Computer Science (1), Theory of Computing (1).

UNIVERSITY SERVICE

- **Saint Louis University**
 - Chair, Department of Computer Science 2016–2022
 - Director of Computer Science (Dept. of Math/CS) 2010–2016
 - Coach for annual ACM-ICPC Programming Contest 2003 – present
 - Reviewer for SLU's Presidents Research Funds Awards 2010, 2011, 2016
 - Panelist, *Advancing Interdisciplinary Research and Teaching at SLU* 30 October 2017
 - Reviewer for SLU's Beaumont Faculty Development Fund Awards 2010
 - College Marshall at University Commencement 2011
 - Committee Membership
Tenure, Promotion, Sabbatical and Developmental Leave, (School of Science and Engineering) Aug 2024–present
Learning Management System Advisory Board 2020–2022

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| <i>Task Force to Advise the Provost on the Future Structure of College of A&S</i> | 2020 |
| <i>Search Committee for Computer Science/Bioinformatics Faculty</i> | AY2018–2019 |
| <i>Science and Engineering Research Council</i> | 2018–2020 |
| <i>Chair of Search Committee for Director of School of Engineering</i> | 2018 |
| <i>Faculty Advisory Committee, Career Services</i> | 2017–2022 |
| <i>Search Committee for Computer Science Faculty</i> | AY2017–2018 |
| <i>1818 Computer Science Liaison</i> | 2017–2019 |
| <i>A&S Faculty Council, natural science chair representative</i> | 2017–2018 |
| <i>Research Technology & Computing ad hoc working group</i> | 2017 |
| <i>College Faculty Mentoring & Advising Committee</i> | AY2014–2015 |
| <i>Center for Digital Humanities, Advisory Board</i> | AY2014–2015 |
| <i>Search Committee for One-year Computer Science Faculty (chair)</i> | AY2014–2015 |
| <i>Search Committee for Computer Science/Bioinformatics Faculty</i> | AY2014–2015 |
| <i>College Rank and Tenure Committee (Arts & Sciences)</i> | 2012–2014 |
| <i>Masters in Bioinformatics and Computational Biology</i> | |
| <i>Steering Committee</i> | 2014–2022 |
| <i>Ad Hoc Development Committee (Chair)</i> | 2011–2014 |
| <i>Professional Sciences Masters, ad hoc Development Committee</i> | 2012–2014 |
| <i>Task Force for Center of Informatics/Computing</i> | 2011–2013 |
| <i>Subcommittee on STEM-plus proposal organized by Frost VP</i> | AY2010–2011 |
| <i>Faculty Council Core Curriculum Committee</i> | AY2010–2011 |
| <i>Search Committee for Department Chair</i> | AY2010–2011 |
| <i>Search Committee for Computer Science Faculty (chair)</i> | AY2008–2009 |
| <i>Search Committee for Computer Science Faculty</i> | AY2007–2008 |
| <i>Faculty Council Core Curriculum Committee (sabbatical replacement)</i> | Fall 2007 |
| <i>Search Committee for Computer Science Faculty (chair)</i> | AY2006–2007 |
| <i>Search Committee for Computer Science Faculty (chair)</i> | AY2004–2005 |
| <i>Search Committee for Electrical and Computer Engineering Faculty</i> | AY2004–2005 |
| <i>Task Force on Email organized by the Vice President for ITS</i> | AY2004–2005 |
| <i>Academic Technology Advisory Committee (College representative)</i> | AY2004–2005 |
| <i>Computer Science Curriculum Committee (ad hoc member)</i> | 2003–present |

- **Loyola University Chicago**

- Undergraduate Program Director for Computer Science. AY2000-2002
- Committee Membership,
 - Computer Science Curriculum* AY2002–2003
 - Undergraduate Computer Science Curriculum (chair)* AY2000–2002
 - Undergraduate Computer Science Curriculum* AY1999–2000
 - Academic Council of the College of Arts and Sciences*
 - Computer Science representative AY2001–2003
 - Curriculum Committee AY2002–2003
 - Search Committee for Chair of Computer Science* AY2001–2002
 - Search Committee for Chair of Computer Science* AY2000–2001
 - Finnegan-Rammler Scholarship Selection* 2001, 2002, 2003
- Academic Advisor, summer orientation for incoming CAS Freshmen 2001

COMMUNITY SERVICE

- **Organizer and Leader** of a half-day Computer Science program for high school students as part of the “Forward Through Ferguson Math Initiative” at McCluer North High School Summer 2021
- **Planning Committee** Eastern Missouri & Southern Illinois chapter of the National Center for Women & Information Technology (NCWIT) Aspiration in Computing award 2019–2022
- **Organizer and Leader** of the after-school *Computer Science Club* at Cardinal Ritter College Prep High School Fall 2018
- **Presenter**, Saint Louis Priory School, Careers & College Majors Seminar 2017, 2018
- **Organizer and Leader** of the after-school *Computer Science Club* at Meramec Elementary School, a weekly activity for students in grades 3–5 (12 weeks, 48 students) Spring 2015
(12 weeks, 48 students) Fall 2009
(12 weeks, 48 students) Fall 2008
- **Assistant**, Meramec Elementary School, “Hour of Code” sessions December 2014
- **Presenter**, Meramec Elementary School, STEM Career Day May 2014
- **Mentor**, Meramec Elementary School, First Lego Robotics team 2014
- **Advisory Board Member**, Hazelwood High School, Computer Science Pathway 2014
- **Advisory Board Member**, Clyde Miller Career Academy, Database Management program 2014
- **Scholarship Committee Member** for St. Louis Chapter of the Society for Information Management (SIM) 2012
- **Organizer and Leader** (with David Letscher) of workshops for secondary educators, hosted by the Department of Mathematics and Computer Science at Saint Louis University.
- *Scratch Programming* 5 June 2010
- *Python Programming* 4 June 2010
- **Presenter** of an 85-minutes session titled *Bringing Computer Science to K–12 Using Scratch*, at the Fall Conference of the Math Educators of Greater St. Louis (MEGSL). 13 Nov 2009
- **Consultant and trainer** for the non-profit organization *Catch a Falling Star*, regarding after-school activities using the Scratch programming language. Fall 2009
- **Presenter** of 1-hour lesson on Map Coloring at the Math Teacher’s Circle, Washington University 1 Apr 2008

References available upon request.