

Computer Science Department
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Education

B.F.A. (Studio Art), University of Denver, June 2015.

Ph.D. (Computer Science), University of Wisconsin-Madison, Aug 1990.

Thesis: Shared Memory Multiprocessor Scheduling Policies.

Advisor: Professor Mary Vernon.

M.S. (Computer Science), University of Wisconsin-Madison, May 1987.

B.S. (Mathematics), University of Wisconsin-Madison, May 1985.

Awards:

- National Science Foundation Career Award, 1998
- University of Denver Distinguished Teaching Award, 2007
 (awarded to one of the 700 faculty each year)

Professional Experience

Director of Inclusive Excellence	Ritchie School of Engineering and Computer Science, University of Denver	7/17 - present
Professor and Chair	Computer Science Department University of Denver	8/16 - present
Professor and Faculty Director of Creativity and Entrepreneurship Living and Learning Community	Computer Science Department and Living and Learning Communities	8/14 - 7/17
Faculty Senate President	University of Denver	7/12 - 6/14
Professor and Director of Game Development Programs	Computer Science Department University of Denver	9/05 - 7/14
Associate Professor and Director of Game Development Programs	Computer Science Department University of Denver	1/04 - 9/05
Associate Professor and Chair	Computer Science Department University of Denver	6/01 - 1/04

Associate Professor	Mathematics and Computer Science University of Denver	9/98 - 6/01
Visiting Scholar	Computer Science Department University of Otago, New Zealand	1/01 - 4/01
Assistant Professor	Mathematics and Computer Science University of Denver	9/94 - 8/98
Adjunct Assistant Professor	Computer Science Department College of William and Mary	1/93 - 8/94
Staff Scientist	ICASE NASA Langley Research Center	9/92 - 8/94
Post-Doctoral Researcher	IBM T.J. Watson Research Center	9/90 - 8/92

Administrative Experience

- Chair, Computer Science Department, 8/16 - present. Responsible for departmental leadership and management issues including personnel management, budget, hiring, faculty and staff development, curriculum, and student issues. Key ongoing initiatives include: leading the development and implementation of a School of Engineering and Computer Science Inclusive Excellence Strategic Plan to broaden compositional diversity; building strong K12 outreach programs to broaden diversity; building new 1 year professional master's programs in interdisciplinary areas with a computer science core; and enabling increased faculty and student research.
- Faculty Senate President (7/12 - 6/14), President Elect (7/11 - 6/12), and Immediate Past President (7/14 - 6/15). Set/led faculty initiatives, served as spokesperson for the faculty with the upper administration and board of trustees, chair of senate executive committee, ex officio or voting member of most university committees including three board committees, and served many ceremonial duties. Key accomplishments included:
 - Initiated and led a revision of our Appointment, Promotion and Tenure policies to include multi-year appointments for appointed non-tenure track faculty, reclassification of "Lecturers" into "Teaching Professors", revising (strengthen) policy around academic freedom and professional behavior (greater accountability), and broadening of criteria for promotion and tenure to include work in community engagement, inclusive excellence, and public good. I started this effort in 2010 as chair of the senate personnel committee and shepherded it through approval by the entire faculty, administration, and trustees in 2014.
 - Participation in the Strategic Issues Panel on the Future of Higher Education. One product of this work was a public report focused on all of higher education containing 60 questions/answers intended as a point of departure for strategy development. The report, "Unsettling Times: Higher Education In An Era of Change", September 2014, is available at www.du.edu/issues/media/documents/higheredreport.pdf.

- Worked with the provost and faculty senate to increase university budget transparency after an administration decision to not award raises in AY 2012.
 - Initiated senate discussion and two ad hoc committees to explore the creation of a faculty driven post tenure review policy, 2013-2014.
 - Served on a joint faculty-administration university strategic planning committee, 2014-2015.
 - Member of our successful chancellor search committee, 2014.
 - Introduced and shepherded passage of a faculty senate resolution requiring inclusion of candidates that broaden compositional diversity in all on-campus faculty hiring candidate pools, 2015.
 - Counseling faculty and/or mediating with HR on particularly "sticky" personnel issues.
- Director of Game Development Programs, 1/04 - 8/14. Created and coordinated DU's degree programs in Computer Game Development. The programs are interdisciplinary with the Studio Art and Emergent Digital Practices programs. Led interdisciplinary curriculum development, faculty hiring, and recruiting efforts. Developed a mission of "Humane Games", a term we coined to mean: Games for Change; Games for Health; and Games for Education.
 - Inaugural Chair, Computer Science Department, 6/01 - 1/04. Worked with the dean and new mathematics chair to divide resources and set budgets after splitting a previously joint department of mathematics and computer science. Led faculty to identify goals and directions for the new department. Responsible for all aspects of departmental budget, hiring, personnel, curriculum, and student issues.

Industry/Legal/Government Consulting

- Expert Witness: 05/12 - 8/13. Served as expert for several patent infringement cases related to games and distributed/parallel systems.
- Consultant, Vista Life Sciences: 10/09 - 9/10. Designed and developed prototype of traumatic brain injury diagnosis game.
- Consultant, Galileo International: 7/98 - 12/98. Reviewed active research and development programs, designed an airfare shopping algorithm and system.
- Consultant, NASA ICASE: Numerous visits (19 weeks) 9/94 - 8/97. Worked with NASA ICASE scientists on data support for fluid flow visualization, parallel processing algorithms, and numerical solution of Markov Chains.

External Research Grants

- 2017 - 2022** (\$1.9M, DU portion \$300,000) *Cultivating Inclusive Identities of Engineers and Computer Scientists: Expanding Efforts to Infuse Inclusive Excellence in Undergraduate Curricula*, multi-institutional grant with PIs R. Atadero (Colorado State University), K. Rambo-Hernandez (West Virginia University), C. Paguyo (DU) and co-Is R. DeLyser (DU), C. Gauthier-Dickey (DU), R. Hensel (West Virginia University), and M. Morris (West Virginia University), National Science Foundation co-I
- 2013 - 2014** (\$39,950) *Behind the Scenes With The Sims*, with PI Dusty Teng (Strive Prep Middle School) , Entertainment Software Association co-I
- 2010 - 2012** (\$249,983) *University of Denver's Institute for the Digital Humanities*, with PIs A. Russel (Digital Media Studies) and L. Schofield Clark (Communication), and co-Is C. Coleman (Digital Media Studies), W. Depper (Digital Media Studies), R. Fajardo (Art), S. Howard (English), and L. Mehran (Art), National Endowment for the Humanities co-I
- 2006 - 2009** (\$1,176,572) *Improved STEM Preparation through Humane Gaming Camp and High School Education* , with co-Is R. Fajardo (Art), D. Austin (Education), and A. Andrews (Comp Sci), National Science Foundation, ESI-0624767 PI
- 2006** (\$15,000) *DU Game Camp Curriculum Support*, with co-Is D. Austin (Education) and R. Fajardo (Art), Dorr Foundation PI
- 2006** (\$25,000) *Squeezed: A Socially Conscious First-Person Picker*, with PI R. Fajardo (Art), MTVu Digital Incubator Program co-I
- 2005-2006** (\$19,500) *Kids, Art, and Games: A Game Development Workshop and Camp at the University of Denver*, with PI Rafael Fajardo(Art), Colorado Council For The Arts co-I
- 1998-2002** (\$224,863) *Integration of Computational and Data Access Scheduling in NOWs*, National Science Foundation, Career Award PI

- 1998-1999** (\$3,000) *R-tree Support for 3D Exploration of Disk Resident Scientific Data*, Undergraduate Research Grant, Colorado Advanced Software Institute PI
- 1997-2000** (\$333,743) *Geometric Techniques for Multidimensional Databases*, with co-I M. López (Comp Sci), National Science Foundation PI
- 1996-1998** (\$74,825) *Efficient Access Methods for Multidimensional Data*, with co-I M. López (Comp Sci), Colorado Advanced Software Institute PI

Internal University Grants

- 2015** (\$5,000) *A Pilot Study of a Culturally Responsive Game Making High School Curriculum To Broaden Participation In Computing By Latin@ Students*, with co-Is Maria Salazar (Education) and Rafael Fajardo (Art), University of Denver Interdisciplinary Research Incubator For The Study of (In)Equality Fund. PI
- 2011** (\$110,000) *Shared Instrumentation For Motion Capture Of Human Movement*, with PI Bradley Davidson (Mechanical Engineering), and co-Is C. GauthierDickey (Comp Sci), P. Laz (Mechanical Engineering), P. Rulkoetter (Mechanical Engineering), K. Shelburne (Mechanical Engineering), and collaborators P. Bradley-Doppes (Athletics), R. Iznola (Music), J. Lavita (Anthropology), M. López (Mathematics), M. Mahoor (Electrical Engineering), N. Sturtevant (Comp Sci), D. Dennis (Mechanical Engineering) and R. Kim (Mechanical Engineering), University of Denver Equipment Fund co-I
- 2006** (\$22,500) *"Squeezed", A Socially Conscious First-Person Picker*, with co-Is Rafael Fajardo (Art) and Bill Depper (Digital Media Studies), University of Denver Partners In Scholarship (PINS) Fund PI
- 2005-2006** (\$12,500) *Establishing a Research Program in Game Development*, University of Denver Professional Research Opportunities (PROF) Fund PI
- 2000-2001** (\$2,500) *Application of Multi-Dimensional Indexing to GIS*, University of Denver Sabbatical Enhancement PI
- 2000-2001** (\$3,000) *Location Aware Mobile Computing*, with co-Is M. López(Comp Sci) and D. Martin(Comp Sci), University of Denver Proposal Preparation Fund PI
- 1999-2000** (\$21,000) *A Computer Science and Mathematics Core Knowledge Class*, with PI J. LaVita(Mathematics), University of Denver Laptop Curriculum Development Fund co-I
- 1996** (\$2,000) *Parallel Database Indexing*, University of Denver Faculty Research Fund PI

Scholarship Impact - Citations

According to google scholar on 11/17/2017 my h-index was 22 with 3857 total citations. The following table lists my top ten cited publications. Full references are found below.

Citations	Paper Title & Authors
1242	Indexing the positions of continuously moving objects, 2000, Saltenis, Jensen, Leutenegger and Lopez
472	STR: A simple and efficient algorithm for R-tree packing, 1997, Leutenegger, Lopez, and Edgington
308	The performance of multiprogrammed multiprocessor scheduling algorithms, 1990, Leutenegger and Vernon
193	A games first approach to teaching introductory programming, 2007, Leutenegger and Edgington
153	Benchmarks and standards for the evaluation of parallel job schedulers, 1999, Chapin, Cime, Feitelson, Jones, Leutenegger, Schwiegelshohn, Smith and Talby
142	The effect of buffering on the performance of R-trees, 2000, Leutenegger and Lopez
142	A modeling study of the TPC-C benchmark, 1993, Leutenegger and Dias
112	Master-client R-trees: A new parallel R-tree architecture, 1999, Schnitzer and Leutenegger
103	High dimensional similarity search with space filling curves, 2001 Liao, Lopez, and Leutenegger
98	A multi-level solution algorithm for steady-state Markov chains, 1994, Leutenegger and Horton

Journal Publications and Book Chapters

1. Bae, W.D., Alkobaisi, S., Leutenegger, S.T., “IRSJ: Incremental Refining Spatial Joins for Interactive Queries in GIS”, *GeoInformatica*, vol 14, no 4, 2010, pp. 507-543.
2. Argent, L., Depper, W., Fajardo, R., Gjertson, S., Leutenegger, S.T., López, M.A., Rutenebeck, J., “Building A Game Development Program”, *IEEE Computer*, Jun, 2006, pp. 52-60.
3. Leutenegger, S.T., López, M.A., “R-trees”, In D. MEHTA AND S. SAHNI *Handbook on Data Structures and Applications*, CRC Press, 2005.
4. Leutenegger, S.T., López, M.A., “The Effect of Buffering on the Performance of R-Trees”, in *IEEE Transactions on Knowledge and Data Engineering (TKDE)*, vol 12, no 1, 2000, pp. 33-44. This paper is an expanded version of a conference publication listed below.
5. Leutenegger, S.T., Sun, X.H., “Limitations of Cycle Stealing for Parallel Processing on a Network of Homogeneous Workstations”, *Journal of Parallel and Distributed Computing*

(JPDC), Oct 1997, pp. 169-178.

This publication is an expanded version of a conference publication listed below.

6. Leutenegger, S.T., Nicol, D.M., “Efficient Bulk-Loading of Gridfiles”, in IEEE Transactions on Knowledge and Data Engineering (TKDE), volume 9, number 3, May 1997, pp. 410-420.
7. Leutenegger, S.T., Horton, G., “On the Utility of the Multi-Level Algorithm for the Solution of Nearly Completely Decomposable Markov Chains”, In W. STEWART Numerical Solution of Markov Chains, Marcel Dekker, 1995.
8. Leutenegger, S.T., Ma, K-L., “Fast Retrieval of Disk-Resident Unstructured Volume Data for Visualization ”, in AMS-DIMACS volume entitled, “External Memory Algorithms and Visualization”.

Refereed Conference Publications

9. Al-Bow, M., Austin, D., Edgington, J., Fajardo, R., Fishburn, J., Lara, C., Leutenegger, S., Meyer, S., “Using Game Creation for Teaching Computer Programming to High School Students and Teachers”, in Proc. of Innovation and Technology in Computer Science Education, Paris, Jul 2009.
10. Austin, D., Fajardo, R., Leutenegger, S., “Game Creation: Epistemic Learning of Art, Design, and Computer Science”, in ISTE National Education Computing Conference 2009 (NECC’09), Jul, 2009.
11. Austin, D., Fajardo, R., Leutenegger, S.T., “Epistemic Learning Environments: Using Game Creation to Teach Art, Design, Computer Science, and Innovative Thinking”, SITE’09 (Society for Information Technology and Teacher Education Conference 2009), Charleston SC, 2009
12. Al-Bow, M., Austin, D., Edgington, J., Fajardo, R., Fishburn, J., Lara, C., Leutenegger, S., Meyer, S., “Motivating Young Women in Game Development Via the Pixels, Programming, Play and Pedagogy Project”, in Women In Games, 2008.
13. Edgington, J., Leutenegger, S.T., “Using the Ancient Game of Rogue in CS1”, Rocky Mountain Consortium for Computing Sciences in Colleges (RMCCSC 2008), Oct, 2008, also published in the Journal of Computing Sciences in Colleges, Volume 24, Issue 1, pp 150 - 156.
14. Alkobaisi, S., Vojtechovsky, P., Bae, W.D., Kim, S-H., Leutenegger, S.T., “The Truncated Tornado in TMBB: A Spatiotemporal Uncertainty Model for Moving Objects”, in Proc. of

- 19th Database and Expert System Applications (DEXA'08), Sep, 2008. Acceptance rate = 35%.
15. Al-Bow, M., Austin, D., Edgington, J., Fajardo, R., Fishburn, J., Lara, C., Leutenegger, S.T., Meyer, S., "Using Greenfoot and Games to Teach Rising 9th and 10th Grade Novice Programmers", in Proc. of ACM SIGGRAPH SANDBOX 2008, Aug, 2008, pp. 55-59.
 16. Bae, W.D., Vojtechovsky, P., Alkobaisi, S., Leutenegger, S.T., Kim, S-H., "An Interactive Framework for Raster Data Spatial Joins", Proc of ACM Geographic Information Systems 2007 (ACMGIS07), Nov 2007, acceptance rate: $37/128 = 25\%$.
 17. Leutenegger, S.T., Edgington, J.E., "A Games First Approach To Teaching Introductory Programming", in Proc. of ACM SIGCSE 2007, Mar 2007, pp. 115-118, acceptance rate: $108/316 = 34\%$.
 18. Fajardo, R., and Leutenegger, S.T., "Programming, Pixels & Play : A University Summer Game Camp To Attract Under-represented Populations to Game Development and Computer Science", in Proc. of Future Play, Oct, 2006, London, Ontario Canada.
 19. Kim, K-S, López, M.A., Leutenegger, S.T., Li, K-J, "A Network-Based Indexing Method for Trajectories of Moving Objects", in Proc. of the 4th biennial Advances in Information Systems (ADVIS-06), Oct, 2006, Izmir Turkey, pp. 344-353.
 20. Bae, W.D., Alkobaisi, S., Leutenegger, S.T., "An Incremental Refining Spatial Join Algorithm for Estimating Query Results in GIS", in Proc. of the 17th Database and Expert Systems Applications (DEXA-06), Sep, 2006, Krakow Poland, pp. 935-944. $90 / 388$ papers accepted = 23%
 21. Leutenegger, S.T., "A CS1 to CS2 Bridge Class Using 2D Game Programming", Fourth Mid-South Consortium for Computing Sciences in Colleges (CCSC_MS 2006), Mar, 2006, also published in the Journal of Computing Sciences in Colleges, Volume 21, Number 5, 2006, pp 76-83, $21 / 45$ papers accepted = 46%
 22. Ghare, G.D., and Leutenegger, S.T., "Improving Speedup and Response Times by Replicating Parallel Programs on a SNOW", 10th Workshop On Job Scheduling Strategies For Parallel Processing (JSSFPP04), Jun, 2004, also appeared as part of a volume with the same title in Springer Verlag Lecture Notes in Computer Science.
 23. Kim, H-C, López, M.A, Li, K-J., Leutenegger, S.T., "Efficient Declustering of Non-Uniform Multidimensional Data using Shifted Hilbert Curves", Prof. of 9th International Conference on Database Systems for Advanced Applications (DASFAA 2004), Mar, 2004, Jeju Island, Korea, pp. 694-707. $60 / 272 = 22.1\%$.

24. Liao, S., López, M.A., Leutenegger, S.T., “High Dimensional Similarity Search With Space Filling Curves”, in Proc. of Int Conference on Data Engineering (ICDE 2001), Apr, Berlin, Germany, pp. 615-622. $54 / 296 = 18.2\%$.
25. Leutenegger, S.T., Sheykhiet, R., López, M.A., “A Mechanism To Detect Changing Access Patterns and Automatically Migrate Distributed R-tree Indexed Multidimensional Data”, 8th ACM Symposium on Advances in Geographic Information Systems (ACM GIS’2000), Nov, 2000, pp. 147-152. $20 / 70 = 28.6\%$.
26. Ghare, G., Leutenegger, S.T., “Improving Small Job Response Time for Opportunistic Scheduling”, in Proc. of the Eighth International Symposium on Modeling, Analysis and Simulation of Computer and Telecommunications Systems (MASCOTS 2000), Aug, 2000, pp. 264-287.
27. Saltenis, S., Jensen, C.S, Leutenegger, S.T, López, M.A., “Indexing the Positions of Continuously Moving Objects”, in Proc. of ACM SIGMOD 2000, Jul, 2000, pp. 331-342. $42 / 248 = 16.9\%$.
28. García Y.J., López, M.A., Leutenegger, S.T., “Post-optimization and Incremental Refinement of R-trees”, 7th ACM Symposium on Advances in Geographic Information Systems (ACM GIS’99), Nov, 1999, pp. 91-96.
29. Schnitzer, B., Leutenegger, S.T., “Master-Client R-trees: A New Parallel R-tree Architecture”, in Proc. of 11th International Conference on Scientific and Statistical Database Management (SSDBM99), Cleveland Ohio, Jul, 1999, pp. 68-77. $19 / 45 = 42.2\%$.
30. Ghare, G., Leutenegger, S.T., “The Effect of Correlating Quantum Allocation and Job Size for Gang Scheduling”, in Proc. of IPPS’99 5th Workshop on Job Scheduling Strategies for Parallel Processing, Apr, 1999, San Juan, Puerto Rico, Published in Springer-Verlag LNCS Volume 1659, pp. 91-110.
31. S.J. Chapin, W. Cirne, D.G. Feitelson, S.T. Leutenegger, U. Schwiegelshohn, W. Smith, D. Talby, “Benchmarks and Standards for the Evaluation of Parallel Job Schedulers”, in Proc. of IPPS’99 5th Workshop on Job Scheduling Strategies for Parallel Processing, Apr, 1999, San Juan, Puerto Rico, Published in Springer-Verlag LNCS Volume 1659, pp. 67-90.
32. García, Y.J, López, M.A., Leutenegger, S.T., “A Greedy Algorithm for Bulk Loading R-Trees”, in Proc. of 6th ACM Symposium on Advances in Geographic Information Systems (ACM GIS’98), 2 page poster paper, Nov 1998, pp. 163-164,

33. García, Y.J, López, M.A., Leutenegger, S.T., “On Optimal Node Splitting for R-trees”, in Proc. of VLDB 98, New York NY, Aug 1998, pp. 334-344.
49 / 294 = 16.7%.
34. Leutenegger, S.T., López, M.A., “The Effect of Buffering on the Performance of R-Trees”, in Proc. of the 14th International Conference on Data Engineering (ICDE 98), Orlando Florida, Feb 1998, pp. 164-171
54 / 260 = 20.8%.
35. Leutenegger, S.T., López, M.A., Edgington, J.M., “STR: A Simple and Efficient Algorithm for R-Tree Packing”, in Proc. of the 13th International Conference on Data Engineering (ICDE 97), Birmingham England, Apr 1997, pp. 497-506
47 / 240 = 19.6%.
36. Leutenegger, S.T., López, M.A., “An R-tree Buffer Model ”, 2 page poster paper in Proc. of ACM SIGMETRICS 1996, May, 1996, pp. 264-265.
37. Brunstrom, A., Leutenegger, S.T., Simha, R., “Experimental Evaluation of Dynamic Data Allocation Strategies in a Distributed Database With Changing Workloads”, in Proc. of Fourth International Conference on Information and Knowledge Management (CIKM), Baltimore Maryland, Nov 1995, pp. 395-402.
51 / 224 = 22.8%.
38. Horton, G., Leutenegger, S.T., “A Multi-Level Solution Algorithm for Steady-State Markov Chains”, in Proc. of ACM SIGMETRICS 94, Nashville, TN, May 1994, pp. 191-200.
25 / 110 = 22.7%.
39. Leutenegger, S.T., Sun, X.H., “Distributed Computing Feasibility in a Non-Dedicated Homogeneous Distributed System”, in Proc. of SUPERCOMPUTING 93, Portland, Oregon, Nov 1993.
72 / 300 = 24%.
40. Leutenegger, S.T., Dias, D., “A Modeling Study of the TPC-C Benchmark”, in Proc. of ACM SIGMOD 1993, Washington D.C., May, 1993, pp. 22-31.
39 / 235 = 16.6%.
41. Leutenegger, S.T., Vernon, M.K., “Performance of Multiprogrammed Multiprocessor Scheduling Policies”, in Proc. of ACM SIGMETRICS 1990, Boulder, Colorado, May 1990, pp. 226-236.
23 / 103 = 22.3%.

42. Leutenegger, S.T., Vernon, M.K., “Mean-Value Analysis of a New Multiprocessor Architecture”, in Proc. of ACM SIGMETRICS 1988, Sante Fe, New Mexico, May 1988, pp. 167-176. $29 / 129 = 22.5\%$.

Significant Unreferred Reports

1. Griesemer et. al, ”Unsettling Times: Higher Education In An Era of Change”, February 2014, available at www.du.edu/issues/media/documents/higheredreport.pdf.
2. Vernon, M.K., Leutenegger, S.T., “Fairness Analysis of Multiprocessor Bus Arbitration Protocols”, UW-Madison Computer Science Technical Report #744, Sep 1988. *Proposed protocol adopted by IEEE Futurebus standard.*

Panels, Workshops, and Tutorials

1. Wolz, U., Ouyang, Y., Leutenegger, S.T., “Scratching the Subject Surface: Infusing Computing Into K-12 Curriculum”, Panel, in Proc. of ACM SICSE 2011, Mar, 2011,
2. Fajardo, R. and Leutenegger, S.T., “2D Game Design 101”, 3-hour workshop, in Proc. of ACM SICSE 2011, Mar, 2011, workshop acceptance rate: $35/78 = 45\%$.
3. Austin, D., Fajardo, R., Leutenegger, S.T., Meyer, S., “Teacher Game Institute 101: 2D Humane Game Design and Development”, ISTE 2010, 6-hour Workshop, Jun, 2010.
4. Fajardo, R. and Leutenegger, S.T., Michaelson, K., “Game Design and STEM Learning”, Panel Presentation, Games For Change Festival, May, 2010.
5. Fajardo, R. and Leutenegger, S.T., “Game Design 101”, 3-hour workshop, in Proc. of ACM SICSE 2010, Mar, 2010, workshop acceptance rate: $39/86 = 45\%$.
6. Lewis, M., Leutenegger, S.T., Panitz, M., Sung, K, and Wallace, S., “Introductory Programming Courses and Computer Games,” Panel Presentation, in Proc. of ACM SICSE 2009, Mar, 2009, panel acceptance rate: $11/20 = 55\%$.
7. Haller, S.M., Ladd, B., Leutenegger, S.T., Nordlinger, J., Paul, J., Walker, H., Zander, C., “Games: Good/Evil”, Panel Presentation, in Proc. of ACM SICSE 2008, Mar, 2008, pp. 219-220, acceptance rate: $7 / 15 = 47\%$.
8. M.J. Egenhofer, J. Gray, S.T. Leutenegger, D. Papadias, “Seeking the Truth - Curses and Blessings of Experiments”, Invited Panel Presentation, Symposium on Spatial and Temporal Data (SSTD) 2001.

9. G. Horton and S.T. Leutenegger, “Efficient Solution of Markov Chains”, Invited Tutorial, SIGMETRICS 1995.
10. S.T. Leutenegger, “Overview and Modeling the TPC-C Benchmark”, Invited Tutorial, SIGMETRICS, 1994.

Game Demonstrations

1. Mohammed Albow, Bill Depper, Rafael Fajardo, Joshua Fishburn, Molly Fredericks, Charles Harrington, Jeff Hawyrlak, Carlos Lara, Scott T. Leutenegger, Daniel Pittman, Porter Schutz, Ryan Sullivan, Mercedes Testa, “Squeezed: A Socially Conscious Migrant Farm Worker First Person Picker”, Student Competition, Future Play, Oct 2006, London, Ontario Canada. **WINNER Best Future Talent Award.**
2. Swingin’ To The White House, Political Battle, and 270 To Win, three presidential election games created by high school teachers who were 2008 Teacher Game Institute (P4games.org) participants, ACM SIGGRAPH SANDBOX 2008.

Editorial and Referee Work

Games and Education Related Program Committee Member:

- Foundations of Digital Games - 2014
- AERA 2014 Learning and Instruction: Technology Based Environments Review Panel

Database Related Program Committee Member:

- ACM Geographic Information Systems (ACM GIS) 2010
- Database and Expert Systems Applications (DEXA) 2010
- ACM Geographic Information Systems (ACM GIS) 2009
- Database and Expert Systems Applications (DEXA) 2009
- ACM Geographic Information Systems (ACM GIS) 2008
- ACM Geographic Information Systems (ACM GIS) 2007
- IASTED Databases and Applications (DBA) 2006
- IASTED Databases and Applications (DBA) 2005
- IASTED Databases and Applications (DBA) 2004

- International Symposium on Spatial and Temporal Databases (SSTD) 2003
- International Symposium on Spatial and Temporal Databases (SSTD) 2001
- ACM Geographic Information Systems (ACM GIS) 2001
- International Conference on Very Large Databases (VLDB) 2000
- ACM Geographic Information Systems (ACM GIS) 2000

Performance Related Program Committee Member:

- ACM SIGMETRICS 2010
- ACM SIGMETRICS 2007
- ACM SIGMETRICS 99
- International Conference on Distributed Computing Systems (ICDCS) 97
- ACM SIGMETRICS 96

Associate Editor: IEEE Transactions on Software Engineering (TSE), 2001 - 2002

Editor-in-Chief: ACM SIGMETRICS Performance Evaluation Review (PER), 1997 - 2001. Duties included selecting guest editors and topics, working with the guest editors, authors, and the publisher to meet publication deadlines. Note, issue number 1 of each year was the annual conference proceedings and edited by that years proceedings chair.

- E1.** Performance Evaluation Review, Volume 25, Number 2, editor-in-chief Scott T. Leutenegger, guest editor R. Muntz.
- E2.** Performance Evaluation Review, Volume 25, Number 3, editor-in-chief Scott T. Leutenegger, guest editor D. Kotz.
- E3.** Performance Evaluation Review, Volume 25, Number 4, editor-in-chief Scott T. Leutenegger, guest editor D. Nicol.
- E4.** Performance Evaluation Review, Volume 26, Number 2, editor-in-chief Scott T. Leutenegger, guest editor C. Lindemann
- E5.** Performance Evaluation Review, Volume 26, Number 3, editor-in-chief Scott T. Leutenegger, guest editor P. Cao and S. Sarukai
- E6.** Performance Evaluation Review, Volume 26, Number 4, editor-in-chief Scott T. Leutenegger, guest editor J. Hollingsworth and B. Miller

- E7.** Performance Evaluation Review, Volume 27, Number 2, editor-in-chief Scott T. Leutenegger, guest editor C. Williamson
- E8.** Performance Evaluation Review, Volume 27, Number 3, editor-in-chief Scott T. Leutenegger, guest editor M. Squillante
- E9.** Performance Evaluation Review, Volume 27, Number 4, editor-in-chief Scott T. Leutenegger, guest editor E. Nahum and E. Zegura
- E10.** Performance Evaluation Review, Volume 28, Number 2, editor-in-chief Scott T. Leutenegger, guest editor K. Kant and P. Mohapatra
- E11.** Performance Evaluation Review, Volume 28, Number 3, editor-in-chief Scott T. Leutenegger, guest editor B. Li and K. Sahraby

Frequent referee for many conferences and journals.

Grant review panel member and proposal reviewer for various NSF programs.

Other Service

Industry Program Committee Chair, Gaming and Business Simulation Track, 2006 Mile High TieCon conference.

Game Development Program External Review Panel Member for the Ohio Board of Regents, Apr 24 - 26, 2006.

Information Director: ACM SIGMETRICS (1997-1999)

Secretary/Treasurer: ACM SIGMETRICS (1995-1997)

External Program Reviewer, U of Central Oklahoma CS Program, 2000

Teaching Activities

- a) Courses taught and teaching innovation. Teaching load of four or five 4-credit quarter system courses per year since 1994 except 2 per year while department chair and faculty senate president, and 1-3 per year when on sabbatical in 2000-01, 2007-08, and 2015-16. Courses taught and developed listed from least to greatest student maturity.

- Game Camp: a two-week full-time intensive game development curriculum for high school freshmen and sophomores. New course creation. Co-developed with Rafael Fajardo and Susan Meyer. Offered Jun 2006, Jul 2007, Jul 2008, Jul 2009 This work was funded by the Colorado Council For the Arts, National Science Foundation, and the Dorr Foundation. www.p4games.org
- Game Design and Development: a one week short course for rising 11th graders. New course creation, co-developed with Rafael Fajardo. Offered August 2010, 2011, 2012, 2013. This work is funded as part of the University of Denver "Summer Link" program, part of the DU VIP program doing outreach to promising Denver Public School high school students.
- Scratch Game Development. A two day professional development course for elementary and middle school teachers at the Cherry Creek School District. Offered May 2013.
- Teacher Game Institute: a two-week full-time professional development course for secondary school teachers covering game programming, art, design, and pedagogy. New course creation. Co-developed with Debra Austin, Rafael Fajardo and Susan Meyer. Offered Jul 2007, Jul 2008, Jul 2009 This work was funded by the National Science Foundation, and the Dorr Foundation. www.p4games.org
- First year seminar. One quarter game creation course using Flash and Actionscript. First year seminars at the University of Denver are required of all incoming freshmen and seek to set high scholarly expectations from the start. Offered 2005 and 2006.
- First year seminar. One quarter game creation course themed on "Election Games" to coincided with the University of Denver hosting the first 2012 Presidential Debate. Offered 2012.
- Analytical Inquiry: 2 quarter Introduction to Mathematics and Computer Science for non-majors (MATC 0100-1 and 0100-2). New curriculum creation. Although the class previously existed it was based solely on math problem solving and excel. We developed a new approach with topics including HTML, javascript programming of mathematical formulas, simplified code translation, assembly, machine code, gates, and simple architecture. The class was co-developed with Professor James LaVita. Lecture notes were subsequently revised and used by many faculty members. Funded by a University of Denver Laptop Curriculum Development Fund grant. First offered 1999 and offered until 2007.
- Creativity and Entrepreneurship: 3 quarter freshmen sequence that is part of a Living and Learning Community (student live together on the same floor of the dorm and take

- the same year-long sequence). New curriculum creation. Curriculum covers creativity exercises, design exercise including game and experience design, entrepreneurship (startup fundamentals, pitching, product design, marketing, teamwork), attending lectures by guest speakers, and many co-curricular activities. Offered AY15, 16, and 17
- First year freshmen programming in C++. Offered 1995-96.
 - First-quarter freshmen programming using ActionScript and 2D game creation. New curriculum creation. No suitable books existed, all materials self-developed with some help from teaching assistants. A draft self-authored textbook was developed and used by other schools. The course goals were to attract and retain introductory students. Offered Fall 2005 and Fall 2006.
 - First-quarter freshmen programming using Java/Greenfoot and 2D game creation. New curriculum creation. No suitable books existed, all materials self-developed with some help from teachings assistants. A draft self-authored textbook was developed. The course goals were to attract and retain introductory students. Offered Fall 2007 and Fall 2008.
 - First-quarter freshmen programming using Processing. New curriculum creation. No suitable books existed, all materials self-developed. A self-authored textbook was developed and is currently in use by other instructors. The course goals were to attract and retain j introductory students. Offered every year 2009 - 2012.
 - "Hybrid" (part online, part face-to-face) First-quarter freshmen programming using Processing. Co-developed with Susanne Sherba, Jeffrey Edgington, and Jocelyn Nyguen.. Course goals are to improve learning and retention goals compared to traditional approach. Offered fall 2013, 2014.
 - Third-quarter freshmen programming and projects in Java. Offered 2007 and 2009. Topics included elementary datastructures, UML, unit testing, design patters, and projects.
 - Third quarter freshmen class using ActionScript and 2D game programming. New curriculum creation. No suitable books existed, all materials self-developed. This course was a first attempt to motivate computer science via games. Offered spring 2005.
 - Software Tools. A sophomore level course covering makefiles, separate compilation, scripting languages (perl) and graphical user interfaces (TK). New course creation 1997. Class notes self developed with heavy use of numerous O’Rielly "trade" books. After two years teaching of this class was taken over by other faculty and remained in the curriculum until 2009.

- Introduction To Game Design. New course creation. A sophomore level course to introduce game design concepts. Curriculum based on exercises and readings from books by Fullerton, and Salen & Zimmerman coupled with 2D game development assignments. Offered Winter 2010, 2011, 2012, 2013, 2015, 2016, and 2017.
- Game Programming I. New course creation. A sophomore level course to introduce game programming. As a new academic field of study no textbooks, standard list of topics, tools, or approaches exist. Offered Spring 2006 and Spring 2007 using Torque 3D.
- One quarter database management systems course. A more applied version of the two-quarter sequence below focusing on database creation, loading, querying, design (normalization), indexing, SQL, and JDBC. Taught every year other than when on sabbatical 2001 - 2015.
- Two quarter database management systems sequence. Developed materials based on a synthesis of material from UW-Madison, Stanford, and UC-Berkeley. Taught both courses each year from 1995 - 2000.
- Object Oriented Programming and Object Oriented Analysis and Design. Taught at Galileo International Inc. New course creation. Class designed at Galileo’s request to transition procedural programmers to object oriented programming. Class offered in 1998. Class based partially on books, “Object-Oriented Programming Using C++” by I. Pohl and “UML Distilled” by M. Fowler.
- Junior/Senior and Graduate level topics: “Data Visualization”. A lecture and project-based learning course based on Tufte books and D3.js. Offered 2017.
- Junior/Senior and Graduate level topics: “Generative 2D Art”. New course creation. An exploration of using computational techniques to create 2D images utilizing Processing (processing.org), data structures, and algorithms. In part based on the book “Generative Design” by Bohnacker, Gross, Laub, and Lazzeroni. Offered 2015, 2016.
- Junior/Senior and Graduate level topics: “2D Humane Games”. A seminar and project-based learning course based on design books and current papers in the literature. Offered 2009.
- Junior/Senior and Graduate level topics: “Performance Modeling” An introductory senior/graduate course based on the books of Trivedi and Lazowska/Graham/Zahorajan/Sevick. Offered 1995.
- Graduate level topics: “Topics in Database Management Systems”. A seminar course based on current papers in the literature. Offered every year 1995 - 2000.

- Graduate level topics: “Multiprogrammed Multiprocessor Scheduling” A seminar course based on current papers in the literature. Offered 1998.
- Graduate level topics: “Spatial and Spatio-temporal Databases”. A seminar course based on current papers in the literature. Offered 2003.
- Graduate level topics: “Mobile Systems” A seminar course based on current papers in the literature. Offered 2003.

b) PhD Theses Supervised:

- PhD, Aug 2010, Jeffrey Edgington, *Toward Using Games To Teach Fundamental Computer Science Concepts*. Initial placement: Lecturer, U of Denver.
- PhD, Mar 2008, Shayma Alkobaisi (co-supervised with S.H. Kim), *Managing Uncertainty In Spatiotemporal Databases*. Initial placement: Assistant Professor, United Arab Emirates University.
- PhD, Sep 2007, Wan D. Bae (co-supervised with S.H. Kim), *Online Query Processing in Geographic Information Systems*. Initial placement: Assistant Professor, University of Wisconsin - Stout.
- PhD, Dec 2004, Gaurav Ghare, *Scheduling Policies for Shared NOWs*. Initial placement: Amazon.
- PhD, Jan 1999, Yvan García (co-supervised with M. López) *Improving R-trees for Multidimensional Queries*. Initial placement: Qwest.

c) Other Theses/Projects Supervised:

- Undergraduate honors project, 2012: Stephen Rice, *Pig Pandemonium: A Game Used as a Stressor as Part of Coping Strategies Study*
- Undergraduate honors project, 2012: David Fogle, *Pig Pandemonium: A Game Used as a Stressor as Part of Coping Strategies Study*
- Undergraduate honors thesis, 1999: Kristina Andersson, *A Comparison of Quadrees and R-trees for Indexing Scientific Data*
- Undergraduate honors thesis, 1999: Erik Johnston, *Using Computational Modeling to Understand Object Individuation in Infants*, co-advisor, primary advisor Y. Munakata (Psychology).
- Undergraduate honors thesis, 1998: Shad Reeves, *A Comparison of Gridfiles and R-trees*.

- Undergraduate honors thesis, 1998: Soumitra Nanda, *Rent-a-Soft*.
 - Diplomarbeit im Fach Informatik (German thesis similar to a MS Thesis in Computer Science), Dec 1997: Bernd Schnitzer, University of Erlangen Nurnberg, visited University of Denver for 6 months.
- d) Thesis Committee Membership: (Served as committee member or external committee member for many MS, MA, MFA, and PhD committees in Computer Science, Mathematics, Computer Engineering, Digital Media Studies, Geography (GIS), and Education from 1997 - 2015)

University of Denver Service

- Member IMPACT 2025 (University Strategic Plan) Group on Admissions and Financial Aid, 2016-2017
- Member DU Academic Diversity Council, 2015-2017
- Member DU Abrasive Conduct Task Force, 2015-2016
- Member DU Chancellor Search Committee, 2014
- Member DU Strategic Planning Steering Committee, 2014-2015
- Member Board of Trustees' "Future of Higher Education" Strategic Issues Panel, 2013-2014
- Faculty Senate President, 7/2012 - 6/2014
- Faculty Senate President Elect, 10/2011 - 6/2012
- Member Provost's Renew DU Incubator on Interdisciplinarity, 2012.
- Member Provost's Strategic Planning Committee on Academic Technology, 2011.
- Chair Independence and Community subgroup, Center on Aging Committee, 2010-11. Led interdisciplinary group to develop new center strategic plan covering Law, Business, Social Work, Psychology, Music, Art, Computer Science, and Engineering.
- Member DU University Technology Committee, 2009-2010. Advisory committee to Vice-Chancellor of Technology.
- Chair, Faculty Senate Personnel Committee, member Senate Executive Committee, 2009 - 2011. In charge of creating and overseeing subcommittees for faculty sabbaticals, faculty awards, and grievance policy revision.

- Faculty Senate Senator-at-large, 9/09 - present
- Speaker: Provost Luncheon Series, 2009
- Department Faculty Senate Representative, 2008 - 2009.
- Vice-President U of Denver chapter of the American Association of University Professors (AAUP), 2007 - 2012.
- First Year Seminar Instructor and Summer Orientation Leader, 2005, 2006, 2012
- UDCC Instructor and Summer Orientation (Discoveries) Leader, 2003, 2004
- Member Campus-wide PROF internal grant review committee, 2012
- Member NSM/SECS Division PROF internal grant review committee, 2009, 2010, 2011.
- Member DU Faculty Awards Committee, 2009.
- Member planning committee and panel coordinator/speaker for “Pedagogy of Innovation” workshop, Morgridge College of Education, 2009.
- Member planning committee for 2010 DU Center for Teaching and Learning Annual Workshop.
- Speaker: DU Alumni Conference, 2008, 2009.
- Speaker: DU Women’s Library Conference, 2008.
- Member University of Denver Patent Committee, 2002 - 2005.

Computer Science Department Service

- Member/Chair CS Faculty Search Committee, 1995-96,1996-97 (chair), 1997-98, 1998-99 (chair), 1999-2000, 2003-2004 (chair), 2004-2005, 2005-2006, 2006-2007, 2009-2010 (chair), 2012-13, 2013-2014
- Member School of Engineering and Computer Science Tenure and Promotion Committee, 2005-2006, 2009-2010, 2013-14
- Member/Chair CS Department Tenure and Promotion Committee, 2004-2005, 2008-2009, 2009-2010, 2013-2014 (chair), 2014-2015 (chair)
- Chair CS Equipment Committee, 1994-1999.

- Chair System Administrator Search Committee, 1996-97.
- Member Undergraduate Curriculum Committee, 2012-2016

Press Related to the DU Game Development Program and Scholarship The following are print, television, or radio media exposures I facilitated and/or in which I was quoted/featured:

- **HispanicBusiness.com**, “ESA Foundation Announces Education Challenge Grant Winners”, July 30, 2013. Article includes announcing our ESA grant with Strive Prep School titled, “Behind The Scenes With The Sims”.
- **Fox 31** local Denver news, “DU students pursuing degrees in gaming”, Feb 2, 2010. The video aired three times on two local news stations.
www.kdvr.com/news/kdvr-du-gaming-020210,0,7996170.story
- **Denver Post**, “Colleges play into demand for video-game developers”, Jan 26, 2010.
http://www.denverpost.com/news/ci_14267233
- **Get Connected** radio show, Corus Networks, Nov 30, 2009. Ten minute live interview about Humane Games and Farmville. Get Connected, based in Canada, state they have a listening audience of over one million.
www.getconnectedmedia.com/radio
- **Denver Post**, print and online versions, front page. An article titled “Playing the Field”, by reporter Michael Booth, contains several quotes by myself and student Roger Feldkamp about the social game “Farmville” as well as games for change, Nov 23, 2009.
www.denverpost.com/mobile/ci_13848048
- **CNN Money Magazine**, online version, Jun 6, 2008, an article titled “Computer Games as Liberal Arts?” by senior editor David Kirkpatrick, cited our P4games project and quotes co-investigator Rafael Fajardo about using the creation of games for interdisciplinary education.
- **Washington Times** In the Metro Section, an article titled “Video-Game Programming” by reporter Christian Toto, a description of our high school summer game camp and quotes by students and myself comprised over half the article, Aug 30, 2007.
- **LA Times** In the technology section, an article titled “Immigration debate finds itself in play” by reporter Anna Gorman, the “Squeezed” game received favorable treatment. Jul 9, 2007.

- **Prism, the magazine of the American Society for Engineering Education (ASEE)**, Jan, 2007, Reporter: Corinna Wu A long article in the Prism magazine about game development programs in which the DU program is featured including many quotes by myself and a description of our game “Squeezed”.
- **Colorado and Company.** Appearance (with Professor R. Fajardo and student P. Schutz) on local Denver TV talk show on Nov 7, 2006. Discussed our game development program, our game “Squeezed”, and Humane Games.
- **Denver Post.** Business section article titled “DU to interface with teens on video gaming”, by reporter Kimberly Johnson, Nov 5, 2006. An article about our NSF ITEST grant to teach high school math/technology/art via the creation of computer games. Print and web (http://www.denverpost.com/business/ci_4606041).
- **Delta Sky Magazine.** Article titled “But Mom, this IS my homework”, by journalist Laura Daily. Appeared Oct 2006. Print and web (http://www.delta-sky.com/2006_10/RolePlaying/index.html).
- **Inside Bay Area**, AGN Newspapers, includes Oakland Tribune, Aug 25, 2006, online version, “Social consciousness at heart of ’Squeezed””, http://www.insidebayarea.com/bayarealiving/ci_4236093
- **Time Magazine** Aug 14, 2006, print version. In a one page article titled “Do-Gooder Games”, Squeezed was given the top spot of the 5 games described.
- **Newsweek Magazine** Jul 11 2006, online version. In an article about socially conscious games titled “Gaming the Poor”, by reporter Allan Madrid, our DU game “Squeezed” was granted about about half the article. <http://msnbc.msn.com/id/13818063/site/newsweek/>
- **9News** “Video Game Designers Needed”, reporter Gregg Moss, 3 minute feature story about our Game Development Program on the evening news, Denver NBC TV channel (channel 9), Nov 14, 2005.
- **Denver Post** “Video Gaming Serious Subject at DU”, front page article of Sunday business section, Jun 15, 2005
- **news.com** “Getting a Degree in Mortal Combat”, front page article, May 16, 2005
- **Christian Science Monitor** “Specialty majors are the rage on some campuses”, Oct 5, 2004, pages 15 - 16.