

Computer Science Department
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Education

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
- University of Denver Distinguished Teaching Award
(awarded to one of the 600 faculty each year)

Professional Experience

Professor and Director of Game Development Programs	Computer Science Department University of Denver	9/05 - present
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 Department University of Denver	9/98 - 6/01
Visiting Scholar	Computer Science Department University of Otago, New Zealand	1/01 - 4/01

Consultant	Galileo International	7/98 - 12/98
Assistant Professor	Mathematics and Computer Science Department University of Denver	9/94 - 8/98
Consultant	ICASE NASA Langley Research Center in residence 19 weeks from 9/94 through 8/97	9/94 - 8/97
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

External Research Grants

2006 - 2009	<i>Improved STEM Preparation through Humane Gaming Camp and High School Education</i> Principial-Investigator (with co-Investigtors R. Fajardo, D. Austin and A. Andrews) National Science Foundation, Award number ESI-0624767	\$1,176,572
2006	<i>DU Game Camp Curriculum Support</i> Principial-Investigator (with co-Investigtors R. Fajardo and D. Austin) Dorr Foundation	\$15,000
2006	<i>Squeezed: A Socially Conscious First-Person Picker</i> Co-Investigator (with Principial-Investigtor R. Fajardo) MTVu Digital Incubator Program	\$25,000
2005-2006	<i>Kids, Art, and Games: A Game Development Workshop and Camp at the University of Denver</i> Co-Investigator (with Principal Investigator Rafael Fajardo) Colorado Council For The Arts	\$19,500
1998-2002	<i>Integration of Computational and Data Access Scheduling in NOWs</i> Principal Investigator National Science Foundation Career Award	\$224,863
1998-1999	<i>R-tree Support for 3D Exploration of Disk Resident Scientific Data</i> Principal Investigator Undergraduate Research Grant Colorado Advanced Software Institute (CASI)	\$3,000
1997-2000	<i>Geometric Techniques for Multidimensional Databases</i> Principal Investigator (with M. Lopez) National Science Foundation	\$333,743
1996-1998	<i>Efficient Access Methods for Multidimensional Data</i> Principal Investigator (with M. Lopez) Colorado Advanced Software Institute (CASI)	\$74,825

Internal University Grants

2006	<i>"Squeezed", A Socially Conscious First-Person Picker</i> Principal Investigator with co-Is Rafael Fajardo (Art) and Bill Depper (Digital Media Studies) University of Denver Partners In Scholarship (PINS) Fund	\$22,500
2005-2006	<i>Establishing a Research Program in Game Development</i> Principal Investigator University of Denver Professional Research Opportunities (PROF) Fund	\$12,500
2000-2001	<i>Application of Multi-Dimensional Indexing to GIS</i> Principal Investigator University of Denver Sabbatical Enhancement	\$2,500
2000-2001	<i>Location Aware Mobile Computing</i> Principal Investigator, with M. Lopez and D. Martin University of Denver Proposal Preparation Fund	\$3,000
1999-2000	<i>A Computer Science and Mathematics Core Knowledge Class</i> co-Principal Investigator (PI is J. LaVita) University of Denver Laptop Curriculum Development Fund	\$21,000
1996	<i>Parallel Database Indexing</i> Principal Investigator University of Denver Faculty Research Fund	\$2,000

Scholarship Impact

The following table lists my top ten most cited publications according to Google Scholar on 11/15/2009. Full references are found below.

Citations	Paper Title
699	Indexing the positions of continuously moving objects
282	The performance of multiprogrammed multiprocessor scheduling algorithms
234	STR: A simple and efficient algorithm for R-tree packing
120	The effect of buffering on the performance of R-trees
71	A modeling study of the TPC-C benchmark
63	Benchmarks and standards for the evaluation of parallel job schedulers
56	A multi-level solution algorithm for steady-state Markov chains
44	Distributed computing feasibility in a non-dedicated homogeneous distributed system
42	Master-client R-trees: A new parallel R-tree architecture
33	A games first approach to teaching introductory programming

Journal Publications and Book Chapters

1. Bae, W.D., Alkobaisi, S., Leutenegger, S.T., "IRSJ: Incremental Refining Spatial Joins for Interactive Queries in GIS", to be published in **GeoInformatica**, 2010.
2. Argent, L., Depper, W., Fajardo, R., Gjertson, S., Leutenegger, S.T., Lopeez, M.A., Rutenbeck, J., "Building A Game Development Program", **IEEE Computer**, June, 2006, pp.

52-60.

3. Leutenegger, S.T., Lopez, M.A., “R-trees”, In D. MEHTA AND S. SAHNI **Handbook on Data Structures and Applications**, CRC Press, 2005.
4. Leutenegger, S.T., Lopez, 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. Fajardo, R. and Leutenegger, S.T., ”Game Design 101”, 3-hour workshop, to appear in Proc. of ACM SICSE 2010, March, 2010, workshop acceptance rate: $39/86 = 45\%$.
10. 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, July 2009.
11. Austin, D., Fajardo, R., Leutenegger, S., “Game Creation: Epistemic Learning of Art, Design, and Computer Science”, to appear in ISTE National Education Computing Conference 2009 (NECC’09), July, 2009.
12. 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, March, 2009, panel acceptance rate: $11/20 = 55\%$.

13. 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
14. 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.
15. Edgington, J., Leutenegger, S.T., “Using the Ancient Game of Rogue in CS1”, Rocky Mountain Consortium for Computing Sciences in Colleges (RMCCSC 2008), October, 2008, also published in the Journal of Computing Sciences in Colleges, Volume 24, Issue 1, pp 150 - 156.
16. 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”, to appear Proc. of 19th Database and Expert System Applications (DEXA’08), September, 2008. Acceptance rate = 35%.
17. 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 o Novice Programmers”, to appear Proc. of ACM SIGGRAPH SANDBOX 2008, August, 2008, pp. 55-59.
18. Haller, S.M., Ladd, B., Leutenegger, S.T., Nordlinger, J., Paul, J., Walker, H., Zander, C., “Games: Good/Evil”, Panel Presentation, Proc. of ACM SICSE 2008, March, 2008, pp. 219-220, acceptance rate: $7 / 15 = 47\%$.
19. 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), November 2007, acceptance rate: $37/128 = 25\%$.
20. Leutenegger, S.T., Edgington, J.E, “A Games First Approach To Teaching Introductory Programming”, Proc. of ACM SIGCSE 2007, March 2007, pp. 115-118, acceptance rate: $108/316 = 34\%$.
21. 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”, Proc. of Future Play, October, 2006, London, Ontario Canada.
22. Kim, K-S, Lopez, M.A., Leutenegger, S.T., Li, K-J, “A Network-Based Indexing Method for Trajectories of Moving Objects”, Proc. of the 4th biennial Advances in Information Systems

- (ADVIS-06), October, 2006, Izmir Turkey, pp. 344-353. Also to be published in the Springer LNCS series.
23. Bae, W.D., Alkobaisi, S., Leutenegger, S.T., “An Incremental Refining Spatial Join Algorithm for Estimating Query Results in GIS”, Proc. of the 17th Database and Expert Systems Applications (DEXA-06), September, 2006, Krakow Poland, pp. 935-944. $90 / 388$ papers accepted = 23%
 24. 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), March, 2006, also published in the Journal of Computing Sciences in Colleges, Volume 21, Number 5, 2006, pp 76-83.
 25. 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 (JSSFP04), June, 2004, also to appear as part of a volume with the same title in Springer Verlag Lecture Notes in Computer Science.
 26. Kim, H-C, Lopez, 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), March, 2004, Jeju Island, Korea, pp. 694-707. $60 / 272 = 22.1\%$.
 27. Liao, S., Lopez, M.A., Leutenegger, S.T., “High Dimensional Similarity Search With Space Filling Curves”, Proc. of Int Conference on Data Engineering (ICDE 2001), April 2-6, Berlin, Germany, pp. 615-622. $54 / 296 = 18.2\%$.
 28. Leutenegger, S.T., Sheykhet, R., Lopez, 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), November, 2000, pp. 147-152. $20 / 70 = 28.6\%$.
 29. Ghare, G., Leutenegger, S.T., “Improving Small Job Response Time for Opportunistic Scheduling”, Proc. of the Eighth International Symposium on Modeling, Analysis and Simulation of Computer and Telecommunications Systems (MASCOTS 2000), August, 2000, pp. 264-287.
 30. Saltenis, S., Jensen, C.S, Leutenegger, S.T, Lopez, M.A., “Indexing the Positions of Continuously Moving Objects”, Proc. of ACM SIGMOD 2000, July, 2000, pp. 331-342. $42 / 248 = 16.9\%$.

31. 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), November, 1999, pp. 91-96.
32. Schnitzer, B., Leutenegger, S.T., “Master-Client R-trees: A New Parallel R-tree Architecture”, Proceedings of 11th International Conference on Scientific and Statistical Database Management (SSDBM99), Cleveland Ohio, July, 1999, pp. 68-77
19 / 45 = 42.2%.
33. Ghare, G., Leutenegger, S.T., “The Effect of Correlating Quantum Allocation and Job Size for Gang Scheduling”, Proceedings of IPPS’99 5th Workshop on Job Scheduling Strategies for Parallel Processing, April, 1999, San Juan, Puerto Rico, Published in Springer-Verlag LNCS Volume 1659, pp. 91-110.
34. 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”, Proceedings of IPPS’99 5th Workshop on Job Scheduling Strategies for Parallel Processing, April, 1999, San Juan, Puerto Rico, Published in Springer-Verlag LNCS Volume 1659, pp. 67-90.
35. Garcia, Y.J, Lopez, 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,
36. Garcia, Y.J, Lopez, M.A., Leutenegger, S.T., “On Optimal Node Splitting for R-trees”, to appear in Proc. of VLDB 98, New York NY, Aug 1998, pp. 334-344.
49 / 294 = 16.7%.
37. Leutenegger, S.T., Lopez, M.A., “The Effect of Buffering on the Performance of R-Trees”, in the Proc. of the 14th International Conference on Data Engineering (ICDE 98), Orlando Florida, Feb 1998, pp. 164-171
54 / 260 = 20.8%.
38. Leutenegger, S.T., Lopez, M.A., Edgington, J.M., “STR: A Simple and Efficient Algorithm for R-Tree Packing”, in the Proc. of the 13th International Conference on Data Engineering (ICDE 97), Birmingham England, Apr 1997, pp. 497-506
47 / 240 = 19.6%.
39. Leutenegger, S.T., Lopez, M.A., “An R-tree Buffer Model ”, 2 page poster paper in Proc. of ACM SIGMETRICS 1996, May, 1996, pp. 264-265.
40. Brunstrom, A., Leutenegger, S.T., Simha, R., “Experimental Evaluation of Dynamic Data Allocation Strategies in a Distributed Database With Changing Workloads”, Proc. of Fourth

International Conference on Information and Knowledge Management (CIKM), Baltimore Maryland, Nov 1995, pp. 395-402.

51 / 224 = 22.8%.

41. Horton, G., Leutenegger, S.T., "A Multi-Level Solution Algorithm for Steady-State Markov Chains", Proc. of ACM SIGMETRICS 94, Nashville, TN, May 1994, pp. 191-200.

25 / 110 = 22.7%.

42. Leutenegger, S.T., Sun, X.H., "Distributed Computing Feasibility in a Non-Dedicated Homogeneous Distributed System", Proc. of SUPERCOMPUTING 93, Portland, Oregon, Nov 1993.

72 / 300 = 24%.

43. Leutenegger, S.T., Dias, D., "A Modeling Study of the TPC-C Benchmark", Proc. of ACM SIGMOD 1993, Washington D.C., May, 1993, pp. 22-31.

39 / 235 = 16.6%.

44. Leutenegger, S.T., Vernon, M.K., "Performance of Multiprogrammed Multiprocessor Scheduling Policies", Proc. of ACM SIGMETRICS 1990, Boulder, Colorado, May 1990, pp. 226-236.

23 / 103 = 22.3%.

45. Leutenegger, S.T., Vernon, M.K., "Mean-Value Analysis of a New Multiprocessor Architecture", Proc. of ACM SIGMETRICS 1988, Sante Fe, New Mexico, May 1988, pp. 167-176.

29 / 129 = 22.5%.

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, October 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.

Significant Technical Reports

1. 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.*

2. Leutenegger, S.T., "Issues In Multiprogrammed Multiprocessor Scheduling", (Ph.D. Thesis), UW-Madison Computer Science Technical Report #954, Aug 1990.

Edited Publications

From 1997 to 2000 I served as Editor-in-chief of Performance Evaluation Review, the quarterly publication of ACM SIGMETRICS. 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

Professional Activities and Service

Database Related Program Committee Member: DEXA 2010, ACM GIS 2009, DEXA 2009, ACM GIS 2008, ACM GIS 2007, DBA 2006, DBA 2005, DBA 2004, SSTD 2003, SSTD 2001, ACM GIS 2001, VLDB 2000, ACM GIS 2000

Performance Related Program Committee Member: ACM SIGMETRICS 2010, ACM SIGMETRICS 2007, ACM SIGMETRICS 99, ICDCS 97, ACM SIGMETRICS 96

Editor-in-Chief: ACM SIGMETRICS Performance Evaluation Review (PER), 1997 - 2001

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

Conference Panel Member: "Seeking the Truth - Curses and Blessings of Experiments", Symposium on Spatial and Temporal Data (SSTD) 2001.

Workshop: "Game Design 101", ACM SIGCSE 2010.

Conference Panel Member: "Introductory Computer Programming and Games", ACM SIGCSE 2008.

Conference Panel Member: "Games: Good/Evil", ACM SIGCSE 2008.

Industry Conference Panel Moderator: "Is a Gaming Degree a Ticket to a Bright Future or an Excuse to Play Games?", 2006 Mile High TieCon conference.

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, April 24 - 26, 2006.

Information Director: ACM SIGMETRICS (1997-1999)

Secretary/Treasurer: ACM SIGMETRICS (1995-1997)

Participant NSF IDM Workshops: 1998, 1999, 2000

NSF Grant Proposal Review Panels: ITR 4/03, New Technologies 5/97, New Technologies 12/97, SBIR 9/95.

Grant proposal reviewer for various NSF programs.

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

Frequent referee for many conferences and journals.

Consultant, Galileo International: 7/98 - 12/98

Consultant, NASA ICASE: Numerous visits (19 weeks) 9/94 - 8/97

Invited Tutorials:

- ACM SIGMETRICS, “Overview and Modeling of the TPC Benchmarks”, May 1994.
- ACM SIGMETRICS, “Efficient Solution of Markov Chains”, with G. Horton, May 1995.

Member of IEEE, ACM, SIGMETRICS, SIGMOD

Teaching Activities

- a) Courses taught and teaching innovation. Teaching load of 4 or 5 courses per year since 1994 except 2 per year while department chair, and 1 per year when on sabbatical in 2000-01 and 2007-08. 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 Professor Rafael Fajardo. Offered June 2006, July 2007, July 2008. This work was funded by the Colorado Council For the Arts, National Science Foundation, and the Dorr Foundation.
www.p4games.org
 - First year seminar. One quarter game creation course using Flash and Actionscript. Part of a university program to introduce incoming freshmen to scholarship from the first course. Offered 2005 and 2006.
 - “Analytical Inquiry”: 2 quarter Introduction to Math and Computer Science for non-majors (MATC 0100-1 and 0100-2). New curriculum creation. Although the class existed before, it was based solely on math using excel. I 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. Developed class 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 by various faculty members until 2007.

- First year freshmen programming in C++. Offered 1995-96.
- First-quarter freshmen programming class using ActionScript and 2D game creation. New curriculum creation. No suitable books exist, all materials self-developed with some help from teaching assistants. A draft self-authored textbook was developed and used by other schools. The course aims to attract, retain and motivate introductory students. Offered Fall 2005 and Fall 2006.
- First-quarter freshmen programming class using Java/Greenfoot and 2D game creation. New curriculum creation. No suitable books exist, all materials self-developed with some help from research assistants. A draft self-authored textbook was developed. The course aims to attract, retain and motivate introductory students. Offered Fall 2007 and Fall 2008.
- First-quarter freshmen programming class using Processing, Java, and visual programming. New curriculum creation. No suitable books exist, all materials self-developed. A draft self-authored textbook is under-development. The course aims to attract, retain and motivate introductory students. Offered Fall 2009.
- Third-quarter freshmen programming and projects in Java. Offered 2007 and 2009.
- 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 computers 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 vario O’Rielly books. After two years teaching of this class was taken over by other faculty and has remained in the curriculum since 1997.
- 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.
- Three quarter database management systems sequence. Developed materials based an a synthesis of material from UW-Madison, Stanford, and UC-Berkeley. Taught all three courses each year from 1995 - 2000. ‘
- “Object Oriented Programming and Object Oriented Analysis and Design”, taught at Galileo International Inc. New course creation. Class specifically 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: “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: “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, March 2008, Shayma Alkobaisi (co-supervised with S.H. Kim), *Managing Uncertainty In Spatiotemporal Databases*
- PhD, September 2007, Wan D. Bae (co-supervised with S.H. Kim), *Online Query Processing in Geographic Information Systems*
- PhD, December 2004, Gaurav Ghare, *Scheduling Policies for Shared NOWs*
- PhD, Jan 1999, Yvan Garcia (co-supervised with M. Lopez) *Improving R-trees for Multidimensional Queries*

c) Other Theses Supervised:

- 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.
- 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*.

d) Thesis Committee Membership: Shayma Alkobaisi (Ph.D., DU, 2008), Wan Bae (Ph.D., DU, 2007), Lan Lin (Ph.D., DU, 2007), Susi Holman (MA, Digital Media Studies, DU, 2006), Gaurav Ghare (Ph.D., DU, 2004), Marco Gruteser (Ph.D., CU-Boulder, 2004), Sean Liao (Ph.D., DU, 2000), Yvan Garcia (Ph.D., DU, 1999), Peter Breznay (Ph.D., DU, 1999), Clayton Ferner (Ph.D., DU, 1998), Azman Samsudin (Ph.D., DU, 1998), and Radim Bartos (Ph.D., DU, 1997).

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:

- **CNN Money Magazine**, online version, June 6, 2008, an article titled "Computer Games as Liberal Arts?" by senior editor David Kirkpatrick, site 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 Leutenegger comprised over half the article, August 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. July 9, 2007.
- **Prism, the magazine of the American Society for Engineering Education (ASEE)**, January, 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 Leutenegger and a description of squeezed.
- **Colorado and Company.** Appearance (with Professor R. Fajardo and student P. Schutz) on local Denver TV talk show on November 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, November 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 October 2006. Print and web (http://www.delta-sky.com/2006_10/RolePlaying/index.html).

- **Inside Bay Area**, AGN Newspapers, includes Oakland Tribune, August 25, 2006, online version, "Social consciousness at heart of 'Squeezed'",
http : //www.insidebayarea.com/bayarealiving/ci_4236093
- **Time Magazine** August 14, 2006, print version. In a one page article titled "Do-Gooder Games", Squeezed was given the top spot of the 5 games described. Note this game was initiated by Professor Fajardo and myself including seeking initial funding, is advised by Professor Farjardo, Depper, and myself, and is co-designed and solely developed by a team of 10 students.
- **Newsweek Magazine** July 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/* Note this game was initiated by Professor Fajardo and myself including seeking initial funding, is advised by Farjardo, Professor Depper, and myself, and is co-designed and solely developed by a team of 10 students.
- **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), November 14, 2005.
- **Denver Post** "Video Gaming Serious Subject at DU", front page article of Sunday business section, June 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", October 5, 2004, pages 15 - 16

Department and University of Denver Service

- Director of Game Development Programs, 1/04 - present. Created and coordinated DU's new degree programs in Game Development. Interdisciplinary with Studio Art, Electronic Media Arts Design, and Digital Media Studies.
- Inaugural Chair, CS Department, 6/01 - 1/04. Responsible for leadership and administration of the CS department.
- Chair CS subgroup, 1998-2000, leadership role.
- DU University Technology Committee Member, 7/09 - present.

- Faculty Senate Senator-at-large, 9/2009 - present
- Department Faculty Senate Representative, 2008 - 2009.
- Member University of Denver Patent Committee, 2002 - 2005
- Vice-President U of Denver chapter of the American Association of University Professors (AAUP), 4/07 - present
- First Year Seminar Instructor and Summer Orientation (Discoveries) Leader, 2005, 2006
- UDCC Instructor and Summer Orientation (Discoveries) Leader, 2003, 2004
- Member NSM/SECS PROF internal grant review committee, 2008-2009.
- Member DU Faculty Awards Committee, 2008-2009.
- 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.
- Speaker: DU Women's Library Conference, 2008.
- Chair CS Equipment Committee, 1994-1999.
- Chair CS Faculty Search Committee, 1996-97,1998-99, 2003-2004
- Member CS Faculty Search Committee, 1995-96,1997-98, 1999-2000, 2004-2005, 2005-2006, 2006-2007, 2009-2010.
- Member School of Engineering and Computer Science Tenure and Promotion Committee, 2005-2006
- Member Department Tenure and Promotion Committee, 2004-2005, 2009-2010
- Member Department Junior Faculty 3-year Review Committee, 2008-2009.
- Chair System Administrator Search Committee, 1996-97.