VITAE, Dr. Dale E. Parson, http://faculty.kutztown.edu/parson, December 2019

Professional Experience

Kutztown University of PA, Kutztown, PA — Fall 2008–present
Assistant Professor of Computer Science — Fall 2008–Fall 2013
Associate Professor of Computer Science — Fall 2013–Fall 2016
Professor of Computer Science and Information Technology — Fall 2016–present

Sandbridge Technologies, Tarrytown, NY — 2008
Software engineer architecting & building software tools for embedded digital signal processors.

Amplified Computing, LLC — 2007-2008
Created a software consulting company for research and development in location based services, pattern directed inference, mobile telephony services and pattern directed computer music generation.

Agere Systems (formerly Bell Labs), Allentown, PA — 1988 - 1990 and 1991 - 2006
Multimedia Server Architect — 2004 - 2006
Network Processor Instruction and Application Architect — 2002 - 2004
Embedded System Simulator, Debugger and Emulator Tools Architect — 1994 2002
Electronic System Design Automation Tools Engineer — 1988-1990 and 1991-1994

Lehigh University, Bethlehem, PA, and **Kutztown University**, Kutztown, PA — 1999-2005
University Liaison for Agere Systems
Mentor and coauthor with faculty and graduate students and member of computer science Ph.D. candidate committees. Member of PA Infrastructure Technology Alliance, Advisory Board, a consortium of Lehigh, Carnegie Mellon, the State of PA and numerous PA companies. Charter member of Kutztown University Computer Science Industrial Advisory Board in 1994; current chair.

Millersville University of PA, Millersville, PA — 1990 - 1991
Associate Professor of Computer Science

Awards

Consulting Member of Technical Staff, charter member, top 1% of Lucent / Bell Labs engineering population, 2000; Distinguished Member of Technical Staff, 1997.

College of Liberal Arts and Sciences Dean's Outstanding Faculty Award, spring 2018.

Education

Doctor of Philosophy, Computer Science, Lehigh University. Dissertation topic: A Real-time Computational Substrate for Embedded Intelligent Systems. 1990. Grad school cumulative average 4.0.

Master of Science, Lehigh University. Thesis topic: Threaded Intermediate Code. 1986

Bachelor of Science, Computer Science, Albright College. Charter member of Beta Phi Chapter of Alpha Sigma Lambda, an honor society for continuing education students. 1983

Recent professional focus.

Focus in 2018 and 2019 has been on improvised, generative computer art and computer-processed music, including video artwork in the 2019 Art of the State Exhibition at the State Museum in Harrisburg, Second International Workshop on Computer Vision for Fashion, Art and Design, Seoul, November 2019, and First International Workshop on Computer Vision for Fashion, Art and Design, Munich, September 2018. Roughly 50% of my programming students in 2018-2019 have been digital art students. I have served on the Planning Committee for Kutztown's Applied Digital Arts program. I designed Kutztown's new (2019) Graduate Certificate Program in Data Analytics and 3 of its 4 courses.

Recent Service

Chair, Kutztown University Sabbatical Committee, 2014 - 2016.

Member, Planning Committee for Applied Digital Arts major, 2017–present.

Member, Kutztown University Research Committee, August 2009 - August 2013.

Member, Kutztown University Council on Undergraduate Research, September 2012 - 2014.

Chair, Industrial Advisory Board for the KU Department of Computer Science & Information Technology, August 2010–present.

Chair 2014–2015, and member 2013–2014 and 2016–2020, of the departmental promotion committees.

Scribe, 2014–2017, 2019–2020, and member 2011–2017, of the Department Assessment Committee.

Departmental Representative to the Association of Pennsylvania State College and University Faculties (APSCUF), fall 2016–spring 2019, substitute representative fall 2019.

Departmental Library Liaison, 2015–spring 2019.

Courses Taught and Related Industrial Experience

Introduction to Computer Science	Millersville University
Computer Graphics	Kutztown University
Introduction to Creative Graphical Coding	Kutztown University (created syllabus 2014)
Java Programming	Kutztown University
Object-Oriented Multimedia Programming	Kutztown University (created syllabus 2014)
Special Topics in Multimedia Programming	Kutztown University (created syllabus 2019)
Data Structures and Algorithms	Albright College, Millersville & Kutztown U.
Data Structures II	Kutztown University
System Analysis and Design	Millersville University
Software Engineering	Kutztown University
Unix Programming and System Administration	Kutztown University
Operating Systems	Albright College, Kutztown University
Procedure Oriented Programming Languages	Kutztown University
Interdisciplinary Rapid Software Prototyping	Kutztown University (created syllabus 2014, co-taught with Professor Josh Miller of Communication Design Dept. 2014-2020)
Compiler Design I	Kutztown University
Compiler Design II	Kutztown University
Data Mining and Predictive Analytics I	Kutztown University (created syllabus 2016)
Data Mining and Predictive Analytics II	Kutztown University (created syllabus 2016)
Advanced Scripting for Data Manipulation, Analysis, and Machine Learning	Kutztown University (created syllabus 2019)
Database Management Systems II	Kutztown University
Advanced Unix Programming	Kutztown University

Theory of Programming Languages	Kutztown University
Advanced Object Oriented Programming	Kutztown University
Special Topics in Multiprocessing	Kutztown University
Multiprocessing & Concurrent Programming	Kutztown University (created syllabus 2013)
Network Processing and Network Processors	Lehigh University w. Professor Liang Cheng
Software Engineering	Industrial experience mentoring interns
Object Oriented Analysis and Design	Industrial experience mentoring interns
Embedded Systems Algorithms and Architectures	Industrial experience mentoring interns
Debuggers, Simulators and Hardware Emulators	Industrial experience mentoring interns

I reviewed texts and contributed changes to Introduction to Java Programming, Comprehensive Version, 8th Edition by Y. Daniel Liang, 2009, to Network Systems Design by Professor Douglas Comer of Purdue University, 2003, and to Rule-Based Programming by Dr. Leon Levy and Dr. Thaddeus Kowalski of Bell Labs, 1996.

Grants

Fall 2019 Kutztown University Professional Development grant for $900 honorarium and travel support to bring the Princeton Laptop Orchestra to the Kutztown University Planetarium to present and perform, along with demonstrations by my students and myself, in spring 2020.

PASSHE Faculty Professional Development Grant 2019-2020 for $8130, "Remote-controlled, creative graphical simulations for planetariums & high resolution displays", in the Joint Faculty Student Basic or Applied Research category, to cover a faculty summer 2019 stipend and student worker support to investigate interactive graphical simulation and data visualization.

Kutztown University Research Committee Grant in 2018-2019 for $6768 for a high resolution camera body, lenses, and other photographic equipment for use in computer art research and courses.

Kutztown University Research Committee Grant in 2016-2018 for $7999 to purchase a 8-speaker spatial sound system with a digital mixer for the Kutztown planetarium, to support research into "Massively Spatial Sound Processing in an Immersive Space."

Co-PI on National Science Foundation grant award 1458118, *The Computer Science Academic, Retention, and Enrichment Program* (CARE), $614,375 awarded on March 12, 2015 for undergraduate scholarships for underrepresented student populations for five years, with Drs. Randy Kaplan (PI) and Lisa Frye (co-PI). I was an internal reviewer and a student candidate evaluator for the three proposals sent to the NSF in three consecutive years, and took over co-PI duties from Professor Linda Day when she announced her retirement in April 2015, about three weeks after Kutztown was awarded the grant. I am the primary manager of student workers employed via the grant (supplemental instructors, tutors, mentors, and graduate data analysts), and I contribute with the PI and other co-PI in managing all grant funds and activities.

Kutztown University Research Committee Grant in 2015-2017 for $3324 to purchase software tools for programming the August 2015 laser projector in the planetarium (see laser projector grant below), along with auxiliary software and cables, to support research into "Scoring Software for Laser Projector / Surround Sound Systems".

November 2015 Kutztown University Professional Development grant for $900 honorarium and travel support to bring Steve Mokris and Jaymie Strecker Project Ruori, two experts in software tools and composition for live video accompaniment of live musical performances, to Kutztown University Planetarium for a computer music seminar and performance on March 19, 2016. The event included

presentations and performances from faculty members and students in five Kutztown University departments: CDE, CSC, FAR, MUS, & PHY.

PASSHE Faculty Professional Development Grant 2015-2016 for $5400, “Synchronized visualization and sonification of multidimensional datasets”, in the Joint Faculty Student Basic or Applied Research category, to cover a faculty summer 2015 stipend and student worker support to investigate simultaneous use of data visualization and sonification (mapping to sound) to enhance cognitive pattern recognition and to support data analysis by people with visual impairments.

Kutztown University Research Committee Grant in 2014-2016 for $7186, Visualization and sonification of data in a planetarium, part of the above project applied to planetarium visual and sound systems, covers one student worker and software used for the project.

Partnered with Dr. Phill Reed in writing and submitting the $59,350 proposal Laser Projection for the KU Planetarium: A White Paper Proposal to Acting Provost Zayaitz on April 15, 2015, for funding from a Kutztown University central fund. We received the funding; the laser projector was installed alongside the prior raster projector in August 2015; a Computer Science graduate assistant and I are learning how to create novel software for the system in 2015-2016, after which I will include it in my research and computer graphics courses.

Kutztown University Professional Development grant for $892 honorarium and travel support to bring Dr. Margaret Schedel of Stony Brook University, an expert researcher and performer in computer music, to Kutztown University Planetarium for a computer music seminar and performance in March 2014. I received an additional $583 from a Professional Development grant to present a tutorial and custom computer music performance at the 9th Annual Electro-Music Festival in Huguenot, NY in September 2013.

Kutztown University Assessment grant for “Work Pattern Data Mining to Assist Students in Software Development Practices”, $4993, May 2013, for automatic data collection and tool-driven analysis of student time-management patterns and their correlation to programming success and retention in programming courses. The grant covers a one-month summer stipend for myself and 200 hours for an undergraduate research assistant.

Kutztown University Research Committee grant for “High Bandwidth Musician-Computer Interface to Investigate Quantum Composition and Improvisation”, $4796, December 2012.

Intel Corporation’s Academic Partnership Grant for a $5000 stipend to develop project curriculum for parallel multiprocessor programming courses during the winter 2011-2012 and summer 2012 breaks. I consolidated and extended projects from my “Special Topics in Multiprocessing” courses above, wrote and reported on research code, and contributed this material to Intel’s open source Faculty Exchange Program.

Kutztown University Research Committee grant for “Software for the Spatialization and Visualization of Computer Music in the Kutztown University Planetarium and other planetariums”, $300 for books, January 2012.

NVIDIA Online Professor Partnership Grant for one C2070 Tesla multiple graphics processor card valued at $2500, July 2011.

Kutztown University Research Committee grant for “Performance time mapping of language structures to music”, $6900, January 2011.

PASSHE Faculty Professional Development Grant of $4500 ($4000 summer 2010 stipend and $500 for books) to design curriculum and a faculty seminar on “Development of High Performance Computing Laboratory Curriculum”, using the computers from the Sun grant below.

Sun Microsystems “Change Your World” grant for three multithreading Sun servers valued at a list price of $36,630, awarded July 2009.

Kutztown University Research Committee grant for “Real-time Pattern Matching Algorithms for Digital Musical Instruments”, $4700, January 2009.

NSF Curriculum Development Grant 0310745, $90,951 to develop network processing curriculum in two pilot course offerings, with Professor Liang Cheng of Lehigh University, 2003 - 2006, see http://www.nsf.gov/awardsearch/showAward.do?AwardNumber=0310745, CO-PI.

The following grants were from the Pennsylvania Infrastructure and Technology Alliance (PITA), on which I served as Agere’s Industrial Advisory Board member from 2001 through 2006, to Lehigh University. PITA is a consortium of Carnegie Mellon and Lehigh Universities, the Commonwealth of Pennsylvania, and Pennsylvania companies. I coauthored the grant proposals, worked as a CO-PI with Professor Michael Schulte (1997-2002) and Professor Liang Cheng (2002-2006), and supervised Lehigh University graduate student R&D at Agere and Lehigh facilities.

Nine grants from 1997-1998 until 2005-2006 for Agere-Lehigh collaboration totaling $452,964.

1. Compilers and Architectures for Digital Signal Processing - $10,000.

2. Compilers and Architectures for Digital Signal Processing - $40,000.

3. Compilers and Architectures for Digital Signal Processing and Embedded Systems - $30,000.

4. Compilers and Architectures for Digital Signal Processing and Embedded Systems - $39,600.

5. Compilers and Architectures for Digital Signal Processing and Embedded Systems - $60,000.

6. Algorithms, Compilers, Architecture and Tools for Network Processors, Digital Signal Processing and Embedded Systems - $93,387.

7. Embedded Systems and their Applications - $30,181.

8. Embedded Systems and their Applications - $73,993.

9. Embedded Systems and their Applications - $75,803.

Publications

Patents

U.S. Patent 6950963, “Control Method And Apparatus For Testing Of Multiple Processor Integrated Circuits And Other Digital Systems” (Parson, Schlieder, Vollmer & Wilshire), September 27, 2005, coordinated debugging of devices & software on a serial JTAG test chain.

U.S. Patent 6915296, “Incremental Reorganization for Hash Tables,” July 5, 2005, concerning a real-time enhancement to open address hash tables, useful in key-based stateful matching in real-time network processors (such as network address translation).

U.S. Patent 6053947, “Simulation Model Using Object-Oriented Programming,” April 25, 2000, concerning an object-oriented event-driven simulation mechanism.

U.S. Patent Application, US2010/0299319 A1 (Parson, Glossner & Jinturkar), "Method, Apparatus and Architecture for Automated Interaction between Subscribers and Entities," published November 25, 2010.

Juried, Exhibited Computer Art (improvised videos using my custom, interactive software)

[De]fragmenting Architecture, First International Workshop on Computer Vision for Fashion, Art and Design, Munich, September 2018. https://computervisionart.com/pieces/defragmenting-architecture/

Flaming Beauty, 2019 Art of the State Exhibition at the State Museum in Harrisburg, PA. https://youtu.be/PLCAdeZFXSo

The Eyes of a Fly, Second International Workshop on Computer Vision for Fashion, Art and Design, Seoul, November 2019. https://computervisionart.com/pieces2019/eyes-of-a-fly/

Refereed Journal Papers

Journal papers in computer science are refereed and critiqued in their entirety by experts in the field. Computing journals and conferences do not solicit or accept abstract-only submissions.

D. Parson, D. Murray and Y. Chen, "Object-Oriented Design Patterns for Debugging Heterogeneous Languages and Virtual Machines," Software - Practice and Experience 35(3) (March 2005), pp. 255-279.

D. Parson, B. Schlieder and P. Beatty, "Extension Language Automation of Embedded System Debugging," Automated Software Engineering 9(1) (January 2002), pp. 7-39. Invited paper.

D. Parson and Z. Zhu, "Java Native Interface Idioms for C++ Class Hierarchies," Software - Practice and Experience (2000; 30), September 2000, p. 1641-1660.

D. Parson and G. Blank, "PRIOPS: A Real-time Production System Architecture for Programming and Learning in Embedded Systems." International Journal of Pattern Recognition and Artificial Intelligence 4(3), 1990, p. 509-526. Invited paper. This paper was reprinted in Advances in Artificial Intelligence, Applications and Theory, edited by James C. Bezdek. Singapore: World Scientific Publishing, 1990, p. 205-222.

D. Parson and G. Blank, "Automatic versus Controlled Processing: An Architecture for Real-time Production Systems." International Journal of Expert Systems: Research and Applications 2(3/4), 1989, p. 397-422. Invited paper.

Peer Reviewed Conference Papers

Conference papers in computer science are refereed and critiqued in their entirety by experts in the field. Computing journals and conferences do not solicit or accept abstract-only submissions.

"A Circular Planetarium as a Spatial Visual Musical Instrument". This September 2018 white paper was subsequently reviewed and accepted for presentation at the IMERSA 2019 Summit on planetarium and immersive multimedia in Columbus, Ohio, February 2-5, 2019.

"Creative Graphical Coding via Pipelined Pixel Manipulation," Proceedings of the 33rd Annual Spring Conference of the Pennsylvania Computer and Information Science Educators (PACISE) Shippensburg University of PA, Shippensburg, PA, April 6-7, 2018.

D. Parson, G. Smith & A. Wernicki (students), "A Graph Description Language for Blind Programmers," Proceedings of the 32nd Annual Spring Conference of the Pennsylvania Computer and Information Science Educators (PACISE) Edinboro University of PA, Edinboro, PA, March 31-April 1, 2017.

D. Parson, D. E. Hoch & H. Langley (students), "Timbral Data Sonification from Parallel Attribute Graphs," Proceedings of the 31st Annual Spring Conference of the Pennsylvania Computer and Information Science Educators (PACISE) Kutztown University of PA, Kutztown, PA, April 1-2, 2016. We received the Best Paper Award in the Faculty category for this paper.

D. Parson, L. Bogumil & A. Seidel (students), "Data Mining Temporal Work Patterns of Programming Student Populations," Proceedings of the 30th Annual Spring Conference of the Pennsylvania Computer and Information Science Educators (PACISE) Edinboro University of PA, Edinboro, PA, April 10-11, 2015.

D. Parson and A. Seidel (student), "Mining Student Time Management Patterns in Programming Projects," Proceedings of FECS'14: 2014 International Conference on Frontiers in Computer Science & Computer Engineering Education, Las Vegas, NV, July 21 - 24, 2014.

"Using Weka to Mine Temporal Work Patterns of Programming Students," FECS'14: 2014 International Conference on Frontiers in Computer Science & Computer Engineering Education, Las Vegas, NV, July 22, 2014. This one-hour tutorial with questions & answers followed the above paper presentation and was well attended by professors, students, and industry professionals.

"A State Machine Language for the Undergraduate Operating Systems Course," Proceedings of the 29th Annual Spring Conference of the Pennsylvania Computer and Information Science Educators (PACISE) California University of PA, California, PA, April 4-5, 2014.

D. Parson and D. Schwesinger (grad student), "Minimum-Blocking Parallel Bidirectional Search," Proceedings of the 2012 International Conference on Parallel and Distributed Processing Techniques and Applications, CSREA Technology Press, Las Vegas, July, 2012.

D. Parson and P. Reed, "The Planetarium as a Musical Instrument," Proceedings of the 12th International Conference on New Interfaces for Musical Expression, paper and interactive demo, University of Michigan, May 21-23, 2012.

D. Parson and R. Panuski (grad student), "Real-time Grammar-based Parsing and Restructuring of Musical Streams," Proceedings of the 2011 International Computer Music Conference, Huddersfield, UK, July 31–August 5, 2011.

D. Parson, D. Schwesinger and T. Steele (grad students), "Using Jython to Prototype and Extend Java-based Systems," Proceedings of the 26th Annual Spring Conference of the Pennsylvania Computer and Information Science Educators (PACISE), Shippensburg University, Shippensburg, PA, April 8-9, 2011. We received the Best Paper Award in the Faculty category for this paper.

"Algorithmic Musical Improvisation from 2D Board Games," Proceedings of the 2010 International Computer Music Conference, New York City and Stony Brook, NY, June 1-5, 2010.

"Apprenticeship in Undergraduate Java Programming," Proceedings of the 25th Annual Spring Conference of the Pennsylvania Computer and Information Science Educators (PACISE), West Chester University, West Chester, PA, April 9-10, 2010.

D. Parson and D. Spiegel, "Using Interface Inheritance to Structure the Data Structures Course," Proceedings of the 2009 International Conference on Frontiers in Education: Computer Science and Computer Engineering, p. 253-259, CSREA Technology Press, Las Vegas, July, 2009. I presented this paper and co-chaired two sessions.

"Chess-based Composition and Improvisation for Non-musicians," Proceedings of the 9th International Conference on New Interfaces for Musical Expression, p. 157-158, paper and interactive demo, Pittsburgh, June 4-6, 2009. I presented an interactive computer demo and poster of this software and also of a Scrabble-to-music generator designed by me and partially programmed by my Java Programming classes.

"Real-time Detection of Finger Picking Musical Structures," Proceedings of Ninth International Conference on Digital Audio Effects, Montreal, September, 2006, http://www.dafx.ca/dafx06_proceedings.html.

D. Parson and L. Frye, "A Distributed API for Searching Multimedia Databases," Proceedings of the 2006 International Conference on Internet Computing, CSREA Technology Press, Las Vegas, June, 2006.

D. Parson, “Incremental Reorganization of Open Hash Tables,” 10th IEEE Real-time and Embedded Technology and Applications Symposium (RTAS 2004), Toronto, Canada, May 27, 2004, http://www.cs.virginia.edu/rtas04/wip.html.

W. Li and D. Parson, “Interceptors for Java Remote Method Invocation,” Proceedings of the 2001 International Conference on Parallel and Distributed Processing Techniques and Applications, CSREA Technology Press, Las Vegas, June, 2001.

D. Parson, L. Herrera-Bendezu and J. Vollmer, “Distributed Source Code Debugging for Embedded Systems,” Proceedings of the 2000 International Conference on Parallel and Distributed Processing Techniques and Applications, CSREA Technology Press, Las Vegas, June, 2000.

D. Parson, “Using Java Reflection to Automate Extension Language Parsing,” Proceedings of The 2nd Conference on Domain-Specific Languages, USENIX, October 1999.

D. Parson, P. Beatty, J. Glossner and B. Schlieder, “A Framework for Simulating Heterogeneous Virtual Processors,” Proceedings of The 32nd Annual Simulation Symposium, IEEE Computer Society & Society for Computer Simulation International, April 1999.

“Parallel RISC architecture for real-time symbolic pattern matching.” Proceedings of Applications of Artificial Intelligence IX, Vol. 1468, Part 2, p. 960-971. Edited by Mohan M. Trivedi, Society of Photo-Optical Instrumentation Engineers (SPIE), Bellingham, WA, 1991.

D. Parson and G. Blank, “Constant-time pattern matching for real-time production systems.” Proceedings of Applications of Artificial Intelligence VII, Vol. 1095, Part 2, p. 971-982. Edited by Mohan M. Trivedi, Society of Photo-Optical Instrumentation Engineers (SPIE), Bellingham, WA, 1989.

Conference Panel Discussion

J. Baguyos, D. Wetzel, M. Boyle, B. Lander, S. McLaughlin, S. Hewitt, K. Martynes, D. Parson, A. Cole, “A Summary and Transcript of the ICMC 2010 UnConference UnSession on Computer Music Performance,” 2010 International Computer Music Conference, New York City and Stony Brook, NY, June 5, 2010.

http://arrayblog.wordpress.com/2010/12/13/a-summary-and-transcript-of-the-icmc-2010-unconference-unsession-on-computer-music-performance/

Peer Reviewed Workshop Papers

Workshop papers in computer science are refereed and critiqued in their entirety by experts in the field. Computing journals and conferences do not solicit or accept abstract-only submissions.

“Quantum Composition and Improvisation,” Proceedings of the First International Workshop on Musical Metacreation (MUME 2012), Association for the Advancement of Artificial Intelligence, Stanford University, October 9, 2012.

K. Wires, D. Parson and J. Thilo, “Efficient Checksum Calculation using Reduction Trees,” Proceedings of Advanced Networking and Communications Hardware Workshop (ANCHOR) 2005, Madison, Wisconsin, June 4, 2005, http://www.ece.northwestern.edu/EXTERNAL/anchor.

Qing Ye, Dale Parson, and Liang Cheng, “Hybrid open hash tables for network processors,” 2005 IEEE Workshop on High Performance Switching and Routing (HPSR'05), Hong Kong, May 12-14, 2005.

D. Parson, “Real-time resource allocators in network processors using FIFOs,” Proceedings of Advanced Networking and Communications Hardware Workshop (ANCHOR) 2004, Munich, Germany, June 19, 2004, http://www.ece.northwestern.edu/EXTERNAL/anchor/.

L. Cheng and D. Parson, "Bridging undergraduate learning and research in software and hardware," Proceedings of Workshop on Computer Architecture Education (WCAE) 2004, Munich, Germany, June 19, 2004, http://www4.ncsu.edu/~efg/wcae/2004/.

D. Parson, B. Schlieder and P. Beatty, "Extension Language Automation of Embedded System Debugging," Proceedings of AADEBUG 2000, the Fourth International Workshop on Automated Debugging, Munich, Germany, August, 2000.

D. Murray and D. Parson, "Automated Debugging in Java using OCL and JDI," Proceedings of AADEBUG 2000, the Fourth International Workshop on Automated Debugging, Munich, Germany, August, 2000.

D. Parson, P. Beatty and B. Schlieder, "A Tcl-based Self-configuring Embedded System Debugger," Proceedings of Fifth Tcl/Tk Workshop, USENIX, July, 1997.

Invited Book Chapter

Dale Parson, Qing Ye, and Liang Cheng, "Hybrid open hash tables for network processors," in High-Performance Packet Switching Architectures, Springer-Verlag, Elhanany, Itamar; Hamdi, Mounir (Eds.), ISBN: 1-84628-273-X, 2007.

Doctoral Dissertation in Computer Science

A Real-time Computational Substrate for Embedded Intelligent Systems, Lehigh University, 1990.

Demonstrations and Performances of original electro-acoustic musical compositions and software

On August 1-5, 2016, I was one of six academics selected from over twenty international applicants to participate in the second annual Massively Spatial Music Workshop in The Cube, an immersive room equipped with 148 loudspeakers driven by computer music software, located in Virginia Tech's Moss Arts Center. On the evening of the 5th we kicked off the first annual, three-day Cube Fest concert series, with a full house of computer music enthusiasts, students, and local citizens in attendance. I was accepted in part because of my work in the Kutztown University Planetarium and my desire to improve the spatial sound system in this planetarium.

Created and managed the first biannual Kutztown University Computer Music & Visualization Conference in Kutztown University Planetarium on June 13-14, 2015, co-hosted by Dr. Phill Reed, with about 35 performers from the student, KU alumni, and Electro-Music communities, and between 100 to 150 attendees, free and open to the public, supported by a $840 grant from the KU Professional Development Committee for equipment and dorm rooms in 2015 and $460 for travel-to-plan in 2014.

Solo performance of original electro-acoustic music compositions at the annual Electro-Music Festivals in Huguenot, NY, 2010 through 2015. I also led the Zero-Input Mixer (ZIM) Collaboration that included a student collaborator at Electro-Music 2012, Huguenot, NY, September 2012, see http://event.electro-music.com/. I led a larger Zero-Input Mixer ensemble in 2013, and taught ZIM workshops and conducted ensemble performances in 2014 and 2015.

Computer Music and Audio seminar at the Kutztown University, September 7, 2011, including an original performance with students of our sonic decomposition software, streaming Internet radio, an introductory talk on computer music, video art and technical talk by invited guest Dr. Michael O'Bannon, and guest electronic performance by musicians Jez Creek and Bill Fox. Additional Computer Music Seminars in Kutztown University Planetarium that included original music and video art with student collaborators and invited guests took place on March 20, 2012, September 5, 2012, and March 29, 2014. Two additional planetarium seminars including invited guests, and faculty members and students from five KU departments, took place on March 19, 2016, and another on April 1, 2017, under my direction.

A seminar on “Mapping Language Structures to Musical Phrases,” a performance of original computer music composition A Speck of Dust and an ensemble performance of Crater Dust at Electro-Music 2010, Huguenot, NY, September 2010, see http://event.electro-music.com/.

An invited talk and ensemble performance with Millersville Students of Scrabble-to-MIDI at the annual Millersville Computer Science Symposium, April 21, 2010. A performance of Scrabble-to-MIDI with Kutztown students at the 25th Annual Spring Conference of the Pennsylvania Computer and Information Science Educators (PACISE), West Chester University, West Chester, PA, April 10, 2010.

49th Winter, a composition for processed 5-string banjo and guitar synthesizer, and Scrabble-to-MIDI software seminar, a generator for algorithmic music using a human-to-human Scrabble game as a musical structure generator, demonstrated and performed at Electro-Music 2009, Bloomingdale, NJ, October, 2009, see http://event.electro-music.com/.

Computer Music and Audio seminar at Kutztown University, September 30, 2009, including an original performance with students of our Scrabble-to-MIDI music generation software, an introductory talk on computer audio, and an improvised duet for synthesizers and processed acoustic banjo with Howard Moscovitz of electro-music.com.

Invited acoustic performance on banjo and group composition with Kutztown University World Percussion Ensemble, March 31, 2009.

Ordinary Machinery, a composition for processed 5-string banjo and processed spoken word passages (composed and copyrighted with Sierra and Jeremy Parson, 2007), and Music for 32 Chess Pieces (copyright 2008), a generator for algorithmic music using a human-to-human chess game as a musical structure generator, demonstrated and performed at Electro-Music 2008, Kingsport, TN, August, 2008, see http://event.electro-music.com/.