Samuel Siewert

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PRESENT POSITIONS AND APPOINTMENTS

Assistant Professor, Computer, Electrical, and Software Engineering, Embry Riddle Aeronautical Univ.
Assistant Professor Adjunct, Electrical, Computer, and Energy Engineering, Univ. of Colorado Boulder

EDUCATION

2000	**Ph.D. Computer Science**	University of Colorado, Boulder
1993	**M.S. Computer Science**	University of Colorado, Boulder
1991	28 Credit Hours, Computer System Design Engineering	University of Houston, Clear Lake
1989	**B.S. Aerospace and Mechanical Engineering**	University of Notre Dame
1985	7.5 Credit Hours, Early Admission, Physics/Philosophy	University of California, Berkeley

ACADEMIC AND PROFESSIONAL EXPERIENCE

2014-present **Embry Riddle Aeronautical Univ.** ***Assistant Professor, Software Engineering***

Teaching: Software Quality Assurance, Database and File Systems, Software Construction, Programming Languages, Analysis and Design of Software

Research: Embedded Computer and Machine Vision, Video Analytics, Semantic Storage

2012-2014 **University of Alaska Anchorage** ***Assistant Professor, Computer Engineering***

Teaching: Computer and Machine Vision, Graphics, Computer Architecture and Assembly Language Programming, Operating Systems, C/C++, Java, Programming Language Concepts, Digital Media and Interactive Systems, Introduction to Computing

Research: Embedded Computer and Machine Vision, Video Analytics, Big Data Systems

2000-present **University of Colorado at Boulder** ***Various Faculty Positions***

2012-2015 ***Asst. Professor Adj., Computer Engineering***

Teaching: Distance Digital Media and Real-Time Embedded Systems, Computer & Machine Vision

***Research*:** Computational Photometer FPGA-based real-time video transformation research project

2011-2012 ***Sr. Instructional Faculty, Computer Engineering***

Capstone Design for Electrical, Computer and Energy Engineering
ABET Rubric Design and Two Semester Curriculum Improvements
Continued Teaching in Embedded Systems Certification Program (ECEN 5623, 5653)

2000-2011 ***Professor Adjunct, Computer Engineering***

Teaching: Creation and Expansion of Embedded Systems Certification Courses 5623, 5653

Research*:* Machine Vision and Robotics Hardware and Software development

2010-2011 **Intel Corp.** ***Intel Architecture Group***

Transaction level and cycle accurate SoC simulations for performance projection pre-Silicon
Application of Erasure Codes for Cloud Storage and Beyond RAID research
High efficiency server I/O subsystem design and verification using SystemC

2006-2010 **Atrato Inc.** ***CTO (Principal System Architect)***

- ***Architect for Linux application/kernel, C, algorithms, and system architecture development.***
- ***Lead design for Hybrid flash Solid State Disk and HDD RAID array, IO profiler and intelligent block manager –*** *demonstrated 1.8 million I/Os/sec from 240 terabyte sub-rack design.*
- Architected and Implemented Terabyte/Petabyte, Gigabit Scale SAN/NAS Virtualization Engine.
- Designed, built, and delivered cluster file system configuration with 240TB N+1 high availability storage SAN (4G fiber channel) and 10GE LAN NAS services for gigE/10G clients using IBRIX.
- Designed algorithms, implemented, and tested for RAID-1/10, RAID-5/50, RAID-6/60 and logical volume management with fault detection, isolation, and recovery for fail-in-place array design.
- Firmware/software customization of gigabit fiber channel and SAS/SATA expanders and controllers.

2002-2006 **Emulex Corporation** ***Principal Engineer, firmware architect***

- ***Architect for embedded firmware, X-Scale/ARM, C and assembly, for joint Emulex/Intel ASIC.***
- ***Generally Available products by Intel and Emulex - assisted with key architecture decisions.***
- Modeled performance for 4x4G fiber channel, 8 lane SAS/SATA ASIC firmware architecture.
- Development of Fiber Channel, SAS error handling firmware for Emulex/Intel Sunrise Lake ASIC.
- Development of performance measurement and profiling applications for XScale and ARM.
- R&D to develop performance firmware on custom Tensillica SoC (System on a Chip).

2001-2002 **Network Photonics** ***Member Technical Staff, lead developer***

- ***Embedded Linux, C, Prototype 96 channel OC-192 (10Gbps) MEMS DWDM controller.***
- ***PowerPC, VxWorks BSP, C, assembly, boot and driver code for three custom boards.***
- Design, code and test of boot, driver, and application for OC-48/OC-192 DWDM network element.
- Responsible for debug of the TFFS (True Flash Filesystem), RAM filesystem and firewire.
- Embedded Linux: Design, implementation, tuning and test of DWDM MEMS controller application.

2000 **Lucent Technologies Corporation** ***Member Technical Staff***

- Design, implementation and test of real-time fiber optic network element controller software.

1997-2000 **Ball Aerospace Corp.** ***Senior Engineer, lead designer***

- ***PowerPC, VxWorks, C for U. of Arizona, Jet Propulsion Lab and Ball Aerospace Joint Project***
- ***Spitzer Space Telescope Instrumentation Software Architect for MIPS***
- ***Launched by NASA and in operation since August 2003***
- MIPS (Multi-band Imager and Photometer for SIRTF) instrument real-time firmware/software lead.
- Provided configuration and control of two separate detector/mechanism control and signal processing FPGA state machines for sky scan mosaics, super-resolution, and data compression. Software flown on Spitzer telescope, launched in August 2003 (http://www.spitzer.caltech.edu/).

1993-1997 **NASA JPL, CU Space Grant College** ***Research Assistant, lead designer***

- ***Solaris and Linux, C/C++, and embedded C/RTOS for U. of Colorado, NASA JPL Joint Project***
- ***Hitch-hiker payload Flown on Space Shuttle (STS-85)***
- Technology Demonstration of AI automation successfully met research goals
- Co-investigator for real-time automation experiments and development of a Space Shuttle payload End-to-End Mission Operations Software System, flown summer 1997 on STS-85.
- Principal architect of distributed ground control system and embedded flight systems software.
- Responsible for software development management, proposal preparation, GRA/URA training.

1989-1992 **McDonnell Douglas Space Systems** ***Engineer Specialist***

- ***Solaris, C/C++, Ada Development at NASA Johnson Space Center for McDonnell Douglas***
- ***Mission Certification of Ascent/Entry MCC Real-Time Software***
- Developed and installed real-time, mission certified software in Shuttle Mission Control Center.
- Formal presentations and demonstrations to NASA safety and Mission Operations Directorate.
- Developed and demonstrated orbit/entry simulation executive for Aero-assist Flight Experiment.
- Space Station models team - implemented geomagnetic field and space radiation models.

1988 **Lockheed Missiles and Space Co.** ***Summer Engineering Intern***

- Analyzed/evaluated models for atmospheric and thermal environment during launch ascent.

1987 **AT&T Switching Engineering** ***Summer Engineering Intern***

- Analyzed/evaluated forecasts and upgrades for 5ESS digital switching systems.

CONSULTING EXPERIENCE

2014-present **Transductive LLC** ***Founder, Senior Consultant***

- ***Image processing and data transformation computing architectures***

2011-2014 **Trellis-Logic LLC** ***Founder, Senior Consultant***

- ***Cloud scalable and Mobile embedded research and development***
- Block profiler, I/O access visualizer and driver for Tiered storage proof-of-concept in Linux
- Real-time high definition color transformation SDK for Atom, NVIDIA, Windows, Linux
- UAS (Uninhabited Aerial Systems) integrated HD digital video and GIS performance
- Intel/Amplidata Models for Data Durability (Recovery) for RAID and Advanced Erasure Codes

2009 **EnableTV** ***Senior Software Architect***

- ***Architecture for Solid-state Scalable Ad-insertion Emulator, Linux and C/C++***

2007 **Solekai Systems** ***Senior Software Architect***

- ***Delivered Head-end Test System for Open Cable, Linux and C/C++***
- Designed, developed MPEG2 video services, conditional access, PSI data, and open cable apps.

2004-present **Studio-B for IBM, Intel** ***Author, Technical Article Series***

- Big Data Articles for IBM
- Cloud High Performance Computing Series Articles for IBM
- Cloud Computing for Education Series Articles for IBM
- Infrastructure Architecture Essentials Series Articles for IBM
- Big Iron Lessons and SoC Drawer Series for IBM
- Articles on Nehalem-Tylersburg, SSE, VTune, and optimizing Digital Media Apps for Intel

1997-1998 **iCrossing/Newgate Internet** ***Consultant, Software Developer***

- Developed concept for scalable, parallel processing, intelligent, content-based search engine.

1993-1996 **Teledesic Corporation** ***Consultant, RT Mission Operations***

- ***Bill Gates / Craig McCaw Global Telecommunications Venture***
- Developed constellation operation automation strategies presented to a NASA JPL.

PATENTS

2013 ***US Pat. 8,473,779*** – Systems and methods for error correction and detection, isolation, and recovery of faults in a fail-in-place storage array, granted June 25, 2013.
2008 ***US Pat. 7,370,326*** - Prerequisite-based scheduler, granted May 6, 2008.

INVENTIONS

2012 ***Invention Disclosure*** **-** A Method to Verify Video Encode, Transport, Decode and Display Latency Using Automatic Concurrent Pattern Generation and Recognition
2011 ***US Application 20110271065*** – Storage System Front End with Protocol Translation
2010 ***US Application 20100199036*** – Systems and Methods for Block-Level Management of Tiered Storage
2009 ***Invention Disclosure*** - Scalable Virtualization Controller for Solid-State Storage (VxSSD)

TEACHING AND ADVISING EXPERIENCE

2014-presnet **Embry Riddle Aeronautical University** ***Assistant Professor***

CS 317, File and Database Management Systems	Fall 14
SE 420, Software Quality Assurance	Fall 14

2012-2014 **U. of Alaska Anchorage, Computer Science & Engineering** ***Assistant Professor***

CSE A485, Computer and Machine Vision	Fall 12, Spring 14
CSE A331, Programming Language Concepts	Spring 14
CSE A102, Introduction to Computing Systems	Spring 14
CSE A490, Digital Media and Interactive Systems	Fall 13
CSE A215, Object Oriented Programming for Engineers (C/C++ and Java)	Spring 13
CSE A335/A320, Operating Systems Engineering	Spring 13/Fall 13
CSE A225, Computer Organization and Assembly Programming	Fall 12
Alaska Space Grant Advisor, John Harriss, Autonomous Submersible	Fall 13/Spring 14
Alaska Space Grant Advisor, Wolfram Donat, Zach Mildon, Autonomous Submersible	Fall 12/Spring 13
Fundamentals of Engineering Exam Review – Computer Engineering Topic	Fall/Spring 12, 13

2000-present **U. of Colorado, Electrical and Computer Engineering** ***Asst. Professor Adjunct***

ECEN5043, Computer and Machine Vision Systems	Spring 15
ECEN5623, Real-Time Embedded Systems Distance Library Course	Summer 12-14, Spring 14
ECEN 8990-923, Doctoral Thesis Advising	Spring 14
ECEN5653, Real-Time Digital Media, Distance Library Course	Summer 12-14, Spring 14
ECEN 5840/41, Independent Study Real-Time Audio/Video	Fall 13, Spring 14, Fall 14
ECEN 5653, Real-Time Digital Media	Spring 12
ECEN 5623/4623, Real-Time Embedded Systems	Fall 11
ECEN 5840, Graduate Design Independent Study (Ultrasound Venous flow rates)	Fall 11
ECEN 5840, Graduate Design Independent Study (Linux HD Video for ARM Coretex)	Fall 11

Dissertation Committee, Wang-ting Lin, "Robust QoS Scheduler in Open Real-Time Systems", Fall 09

ECEN 5623/4623, Real-Time Embedded Systems	Fall/Spring 00-07, Fall 08-10, Summer 02, 03, 08
ECEN 5653, Real-Time Digital Media	Spring 08, 09, 10, 11
ECEN 5840/41, Independent Study Real-Time Audio/Video	Summer 06, Fall 06
ECEN 8990, Doctoral Thesis Advising	Fall/Spring 04-05
ECEN 5840, Independent Study, Real-Time Sensor Fusion	Fall 03

1996–1999 **U. of Colorado, Computer Science/Aerospace Engineering** ***Graduate Instructor***

ASEN 4519, Embedded Real-Time Systems Software	Fall 1997, Spring 1999
CSCI 3753, Operating Systems Recitation/Lab	Spring 1996

RESEARCH PROJECTS

2012-present **Embry Riddle, Computer, Electrical and Software Engineering** ***Asst. Professor***

- Computational Photometer for Sensor Fusion and 3D Image Analysis

2012-2014 **U. of Alaska Anchorage, Computer Science & Engineering** ***Assistant Professor***

- Computer Components Assembly Lab and TI-OMAP, FPGA Computer Vision Processing

2000–present **U. of Colorado, Computer Engineering** ***Sr. Instructor, Assistant Professor Adj.***

- Computational Photometer, Binocular 3D FPGA Machine Vision Embedded System Co-processor
- Advisor on MORPHED Real-time combined computer vision and data glove processing of American Sign Language as summarized in "***A Hybrid Sign Language Recognition System***", by Van Culver.

1992 – 2000 **University of Colorado, Graduate Research** ***Ph.D. Student***

- Real-time Execution Performance Agent, Ph.D. thesis, Dr. Gary Nutt advisor
- Distributed Automation Technology Advancement – Shuttle STS-85 Hitchhiker payload
- A Common Core Language Design for Layered Extension, M.S. thesis, Dr. Ben Zorn advisor
- Artificial Neural Network and DSP kernel-based cancerous cell detection – Smart microscope

RESEARCH VISITS AND COLLABORATION

2013	Invited to Intel Labs University Collaboration Symposium, San Francisco California
2011-2014	Participant, Intel Embedded System Research and Education, Chandler Arizona
2011	Served on Intel Innovation Council, Data Protection Advanced Development
2009	Invited to the Advanced Computing Systems Workshop 2009, Annapolis Maryland.
1997	U. of Arizona Steward Observatory, Spitzer Space Telescope, Dr. George Rieke
1994	NASA Jet Propulsion Lab, AI Group - Dr. Steve Chien and Dr. Dennis Decoste

MAJOR FUNDING R&D CONTRACTS

2013-2014	Proof-of-Concept Hybrid HDD, SSD Storage Access Profiler and Visualization [$50K+]
2012-2013	Poof-of-Concept for Real-Time HD Video Color Transformation OEM Solution [$250K+]
2012	Phase-II Unmanned Aerial Systems Digital Video and Graphics Analysis [$130K]
2012	Advanced Erasure Code Models and Data Recovery Analysis [$5K]
2011	Phase-I Unmanned Aerial Systems Digital Video and Graphics Analysis [$35K]
2011	Proof-of-Concept for Real-Time High Definition Video Color Transformation Player [$60K]
2006-2008	Atrato Inc. Software Defined Storage, Principal Architect/CTO [Series A, B, C]

GRANTS AWARDED

2014	University of Alaska, Anchorage - Faculty Leadership in Expanding Undergraduate Research [$5K]
2013	Intel Computer Vision Research and Education Grant for University of Alaska Anchorage [$15K]
2013	Altera DE4 and Quartus-II Hardware/Software Equipment Grant for U. of Alaska Anchorage [$10K]
2012	Intel Embedded Systems Research and Education Grant for University of Colorado, Boulder [$20K]
2011	Intel Embedded Systems Research and Education Grant for University of Colorado, Boulder [$15K]
2007	Qualcomm Grant for Embedded Lab Equipment Upgrades, U. of Colorado (Co-Awarded) [$30K]
2003	University of Colorado, Engineering Excellence Fund Grant for ECEN 4623/5623 [$50K]
1994	University of Colorado Graduate School Dean's Small Grant Award, Ph.D. research [$2K]

HONORS AND AWARDS

2014	Erdös number=3	
2013	Intel Developer Recommended Reading List 2013, Operating Systems, ISBN 13: 9781584504689	
2006	Mensa International	Member (#100134555)
2000	Tau Beta Pi National Engineering Honor Society	Life member
1998	NASA Group Achievement Award	Tech. Demonstration flown on STS-85
1994	University of Colorado UGGS	Teaching Assistant Award
1991	McDonnell Douglas Astronautics, Houston	Division Achievement Award
1985	NASA Space Shuttle Student Involvement Program	Regional Winner and National Finalist
1985	National Merit Scholarship Corp.	Scholarship Finalist
1984	California Scholarship Federation	Life Member
1984	Accelerated Student Program and Early Admission	University of California, Berkeley

PROFESSIONAL SERVICE AND AFFILIATIONS

2014-present	Member Software Technical Committee and Cybersecurity Working Group, AIAA
2014-present	Nat'l Institute of Justice, Standing Review Panel, Video Technology and Digital Evidence
2014-present	Expert witness, Digital Cinema Technology
2014-2014	Vice Chair, IEEE Executive Committee, Alaska Section (interim, January to May)
2014	University of Alaska Anchorage, CSE Cyber-physical faculty search committee
2012-2014	Affiliate Director Alaska Space Grant, University of Alaska Anchorage
2012-2014	Lab Director, Computer Prototype and Assembly Lab, University of Alaska Anchorage
2012	Computer Science and Engineering Curriculum Committee, U. of Alaska Anchorage
2012	Treasurer of RAS Chapter for IEEE Denver Region 5
2010-2011	Founder and Chair of RAS (Robotics and Automation) Chapter for IEEE Denver Region 5
2008-present	Senior member of Institute of Electrical and Electronics Engineers (#41272120)
2006-2007	Member of Storage Networking Industry Association – IOTTA TWG, SMIS TWG
2000-present	Co-founder of U. of Colorado Electrical Engineering Embedded Certification Program
1997-present	Senior member of American Institute of Aeronautics and Astronautics (#032578)

TEXTBOOK PUBLICATIONS

1) S. Siewert, ***Real-time Embedded Components and Systems***, First Edition, Cengage Leaning, Charles River Media, June 27, 2006, ISBN 10: 1584504684, ISBN 13: 9781584504689.
2) S. Siewert, J. Pratt, ***Real-Time Embedded Components and Systems Using Linux and RTOS***, Second Edition, Mercury Learning and Information, Dulles Virginia, (in preparation).

JOURNAL PUBLICATIONS

1) S. Siewert, D. Nelson, "***Solid State Drives in Storage and Embedded Applications***", Intel Technical Journal, July 2009.
2) G. Nutt, S. Brandt, A. Griff, S. Siewert, T. Berk and M. Humphrey, "***Dynamically Negotiated Resource Management for Data Intensive Application Suites***", IEEE Transactions on Knowledge and Data Engineering, Volume 12, No. 1, pp. 78-95, January/February 2000.

INVITED PAPER AND WORKSHOP PUBLICATIONS

1) S. Siewert, "***On-Demand Cloud High Performance Computing for Video Analytics***", BIT's 2nd Annual World Congress on Cloud Computing 2013, Dalian, China, June 2013.
2) S. Siewert, Greg Scott, "***Next Generation Scalable and Efficient Data Protection***", Intel Developer's Forum, San Francisco, California, September 2011.
3) S. Siewert, "***Storage Acceleration, Driven by Autonomic Software***", Storage and Networking Industry Association, Storage Developer's Conference, Santa Clara, California, September 2010.
4) G. Nutt, T. Berk, S. Brandt, M. Humphrey and S. Siewert, "***Resource Management for a Virtual Planning Room***", International Workshop on Multimedia Information Systems (MIS 97), pp.129–134, Como, Italy, September 25–27, 1997.

CONFERENCE PUBLICATIONS

1) S. Siewert, J. Shihadeh, Randall Myers, Jay Khandhar, Vitaly Ivanov, "***Low Cost, High Performance and Efficiency Computational Photometer Design***", SPIE Sensing Technology and Applications, Baltimore, Maryland, May 2014.
2) S. Siewert, M. Ahmad, K. Yao, "***Verification of Video Frame Latency Telemetry for UAV Systems Using a Secondary Optical Method***", AIAA SciTech, National Harbor, Maryland, January 2014.
3) S. Siewert, M. Vidalon, "***Building a Continuing Education Program for Embedded Systems with Labs and Distance Support***", IACEE 11th World Conference on Continuing Engineering Ed., May 2008.
4) S. Siewert, Zach Pfeffer, "***An Embedded Real-Time Autonomic Architecture***", IEEE Denver Technical Conference, April 2005.
5) S. Siewert, "***IO Latency Hiding in Pipelined Architectures***", IEEE Denver Tech. Conf., April 2005.
6) Z. Pfeffer, S. Siewert, "***A Machine to Support Autonomic Computing***", IEEE Denver Tech. Conf., April 2005.
7) George H. Rieke, Erick T. Young, et al, S. Siewert, Donald W. Strecker, et al, "***On Orbit Performance of the MIPS Instrument***", SPIE Proceedings, Volume 5487, Optical, Infrared, and Millimeter Space Telescopes, October 2004.
8) S. Siewert, "***Experiments with a Real-Time Multi-Pipeline Architecture for Shared Control***", IEEE Aerospace Conference, Big Sky, Montana, March 2001.
9) S. Siewert and G. Nutt, "***Multi-Epoch Scheduling within the Real-Time Execution Performance Agent Framework***", IEEE Real-Time Systems Symposium, Orlando, Florida, November 2000.
10) S. Siewert, G. Nutt, and E. Hansen, "***The Real-Time Execution Performance Agent - An Approach for Balancing Hard and Soft Real-Time Execution for Space Applications*** ", Int'l Symposium on AI, Robotics, and Automation in Space, Noordwijk, Holland, June 1999.
11) R. Shepperd, J. Willis, E. Hansen, J. Faber, S. Siewert, "***DATA-CHASER: A Demonstration of Advanced Mission Operations Technologies***", IEEE Aerospace Conference, 1998.
12) S. Siewert and E. Hansen, "***Lowering the Cost of Mission Operations Through End-to-End Automation***", Int'l Symposium on AI, Robotics, and Automation in Space, Tokyo, Japan, June 1997.
13) S. Siewert, G. Nutt, and M. Humphrey, "***Real-Time Parametrically Controlled In-Kernel Pipelines***", Third IEEE Real-time Technology and Applications Symposium, Montreal, Canada, June 1997.
14) G. Radideau, S. Chien, J. Willis, S. Siewert, P. Stone, "***Interactive, Repair-Based Planning and Scheduling for Shuttle Payload Operations***", IEEE Aerospace Conference, Big Sky, Montana, 1997.

15) S. Siewert and Elaine Hansen, "***A Distributed Operations Automation Testbed to Evaluate System Support for Autonomy and Operator Interaction Protocols***", The ESA/DLR 4th International Symposium on Space Mission Operations and Ground Data Systems, Munich, Germany, Sept. 1996.
16) S. Siewert and G. Nutt, "***A Space Systems Testbed for Situated Agent Observability and Interaction***", The ASCE (American Society of Civil Engineers) 2nd Conference, Exposition and Demonstration on Robotics for Challenging Environments, Albuquerque, New Mexico, 1996.
17) S. Siewert and L. McClure, "***A System Architecture to Advance Small Satellite Mission Operations Autonomy***", 9th Annual AIAA/Utah State University Conference on Small Satellites, Logan, Utah, September 1995.

R&D PUBLICATIONS

1) S. Siewert, "***Big data interactive: Machine Data Analytics – Drop in Place Security and Safety Monitors***", IBM developerWorks, January 2014.
2) S. Siewert, "***Big data interactive - The world of interactive media systems and applications***", IBM developerWorks, December 2013.
3) S. Siewert, "***Big data in the cloud – Data velocity, volume, variety, veracity***", IBM developerWorks, July 2013.
4) S. Siewert, "***Cloud scaling, part 3: Explore video analytics in the cloud***", IBM developerWorks, June 2013.
5) S. Siewert, "***Cloud scaling, part 2: Tour high-performance cloud system design advances***", IBM developerWorks, May 2013.
6) S. Siewert, "***Cloud scaling, part 1: Build your own and scale with HPC on demand***", IBM developerWorks, April 2013.
7) S. Siewert, "***Revolutionary Methods to Handle Data Durability Challenges for Big Data***", Intel White Paper, September 2012.
8) S. Siewert, "***Cloud-based education, Part 3: Cloud-based robotics for education***", IBM developerWorks, February 2012.
9) S. Siewert, "***Cloud-based education, Part 2: Tapping Cloud-based High Performance Computing for Education***", IBM developerWorks, January 2012.
10) S. Siewert, "***Cloud-based education, Part 1: E-learning strategy for instructors***", IBM developerWorks, December 2011.
11) S. Siewert, "***Using Intel® VTune™ Performance Analyzer and Intel® Performance Primitives for Real-time Media Optimization*"**, Intel Corporation, June 2009.
12) S. Siewert, "***Using SSE and IPP to Accelerate Image Processing Algorithms"***, Intel Corporation, August 2009.
13) S. Siewert, "***Infrastructure architecture essentials, Part 7: High-performance computing off the shelf***", IBM developerWorks, December 2008.
14) S. Siewert, "***Infrastructure architecture essentials, Part 5: Content delivery and distribution network design***", IBM developerWorks, November 2008.
15) S. Siewert, "***Infrastructure architecture essentials, Part 4: Scalable enterprise systems management***", IBM developerWorks, October 2008.
16) S. Siewert, "***Infrastructure architecture essentials, Part 3: System design methods for scaling***", IBM developerWorks, October 2008.
17) S. Siewert, "***Infrastructure architecture essentials, Part 2: Find, avoid, and eliminate system bottlenecks***", IBM developerWorks, October 2008.
18) S. Siewert, "***Architecting a grid from components***", IBM developerWorks, September 2007.
19) S. Siewert, "***SoC drawer: The Cell Broadband Engine chip: High-speed offload for the masses***", IBM developerWorks, April 2007.
20) S. Siewert, "***SoC drawer: Opportunities and challenges for SoC designs serving the digital content revolution***", IBM developerWorks, Jan 2007.
21) S. Siewert, "***SoC drawer: Eyes inside the silicon***", IBM developerWorks, October 2006.
22) S. Siewert, "***SoC drawer: SoC design for hardware acceleration, Part 2***", IBM developerWorks, August 2006.
23) S. Siewert, "***SoC drawer: SoC design for hardware acceleration, Part 1***", IBM developerWorks, June 2006.
24) S. Siewert, "***SoC drawer: SoC prognostication***", IBM developerWorks, May 2006.

25) S. Siewert, "***SoC drawer: Detecting and correcting I/O and memory errors***", IBM developerWorks, March 2006.
26) S. Siewert, "***SoC drawer: Shared resource management***", IBM developerWorks, February 2006.
27) S. Siewert, "***SoC drawer: Real-time resource management***", IBM developerWorks, January 2006.
28) S. Siewert, "***SoC drawer: SoC concurrent development***", IBM developerWorks, December 2005.
29) S. Siewert, "***SoC drawer: Function allocation and specification***", IBM developerWorks, Nov. 2005.
30) S. Siewert, "***SoC drawer: The resource view***", IBM developerWorks, October 2005.
31) S. Siewert, "***Big Iron Lessons, Part 6: The right coprocessor can help with encryption***", IBM developerWorks, August 2005.
32) S. Siewert, "***Big Iron Lessons, Part 5: Introduction to cryptography, from Egypt through Enigma***", IBM developerWorks, July 2005.
33) S. Siewert, "***Autonomic Architectures: Apply RAS architecture lessons to the autonomic self-CHOP roadmap***", IBM developerWorks, July, 2005.
34) S. Siewert, "***Big Iron Lessons, Part 4: Power, cooling, and performance: Find the right balance***", IBM developerWorks, May 2005.
35) S. Siewert, "***Big Iron Lessons, Part 3: Performance monitoring and tuning***", IBM developerWorks, April 2005.
36) S. Siewert, "***Big Iron Lessons, Part 2: Reliability and availability: What's the difference?***", IBM developerWorks, March 2005.
37) S. Siewert, "***Big Iron Lessons, Part 1: FPU architecture, now and then***", IBM developerWorks, February 2005.
38) S. Siewert, "***A real-time execution performance agent interface for confidence-based scheduling***", Ph.D. thesis, T 2000 .Si199, U. of Colorado library, 2000.
39) S. Siewert, "***Operating Systems Support for Parametric Control of Isochronous and Sporadic Execution Streams in Multiple Time Frames***", Ph.D. proposal, U. of Colorado, December 1996.
40) S. Siewert, "***A Common Core Language Design for Layered Language Extension***", M.S. thesis, T 1993 .Si19, U. of Colorado library, 1993.