William L Honig

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ACM Digital Library Author Page:
http://dl.acm.org/author_page.cfm?id=81339505525

Education

1975| Ph.D. Computer Science, Northwestern University

Dissertation: "A model of data structures commonly used in programming languages and data base management systems", Advisor: Benjamin Mittman, Full text: http://ecommons.luc.edu/cs_facpubs/61/

1971| M.S. Information Systems, University of Chicago

Areas of concentration: formal languages, compilers

1969| B.S. Mathematics, University of Michigan

Areas of concentration: programming languages, operating systems

Honors: William J Branstrom Prize in Mathematics

Academic Experience

2002 | present   Associate Professor

Loyola University Chicago | Department of Computer Science

2016 | 2016   Visiting Professor

Keio University | Department of Computer Science | Tokyo, JAPAN

2009 | 2010   Visiting Scientist

Software Engineering Institute | Carnegie Mellon University

2002 | 2006   Chairperson

Loyola University Chicago | Department of Computer Science

2001 | 2002   Visiting Professor

Loyola University Chicago | Department Mathematical & Computer Sciences

2001 | 2002   Adjunct Professor

Northwestern University | Technological Institute

Professional Experience
1993 |2001   Motorola, Inc.

Director, Asia/Pacific Portfolio Management, Network Solutions Sector, Hong Kong and Arlington Heights, Illinois. Define needs of Asia / Pacific customers for new wireless systems, including CDMA, GSM, iDEN, and Third Generation Systems. Use these needs to drive the correct level of R&D investment. Support regional teams in key new sales opportunities, with emphasis on the evolution to 3G and the introduction of the Aspira TCP/IP core network. Represent company in political, standards, and industry gatherings.

Director, System Integration and Test, Satellite Communications, Chandler, Arizona. Manage integration and testing of subcontracted and internally developed communication components for the Iridium network. Completed the implementation of radio frequency and digital test facilities to enabled testing prior to launching satellites.

Vice President, High End Networking, Motorola Codex, Canton, Massachusetts. Lead hardware developers, software developers, systems engineers, and testing groups engaged in development of a new product using packet technology to provide efficient bandwidth management of voice, data, and video in corporate networks

1988 | 1993   U S WEST Advanced Technologies

Director, Network Architecture & Standards, Boulder, Colorado
Create network vision and evolution plans for U S WEST domestic and international businesses. Define technology solutions including broadband ISDN, wideband data services, SONET transport, and Advanced Intelligent Network switching solutions. Manage internal data communications networks. General Chairman of IEEE GLOBECOM '91 conference.

Director, Information Architecture & Standards, Boulder, Colorado
Responsible for creation of strategic Computer and Communications technology direction for U S WEST's telephone network and other diversified businesses. Direct product selection for all hardware and software necessary to provide a distributed computing infrastructure. Created and deployed new Unix-based human interface architecture and high availability data platforms.

1979 | 1988   GTE Corporation

Chief Scientist & Director of Technology, GTE Data Services, Tampa, Florida
Responsible for identification of new telecommunications technology for evolution of GTE's information systems supporting both internal data systems and revenue generating value added services. Conceived and implemented entrepreneurial program to foster new business ideas. Served as chairman of university advisory boards and participate on State of Florida industry councils.

Director, Advanced PBX Development, GTE Communications Systems, Reston, VA
Complete product development responsibility for new business phone systems for voice, data, and integrated office services.

Director, Network Technology Systems, GTE Telenet, Vienna, Virginia
Development responsibility for Network Control Center supporting line of packet data switching products and the first commercial packet network in the U.S.A.

1977 | 1979   International Telephone and Telegraph

Manager, System 12 Development, ITT Telecommunications Technology Center
Management of product development teams for call processing implementation, test support software development, and operations of computer center.

1969 | 1977   Bell Telephone Laboratories, Inc.

Member of Technical Staff, Naperville, Illinois, and Whippany, New Jersey

Responsible for design and implementation of central office switching software for local and toll switching, mobile telephone trials, support software, and computer aided test tools. Successfully introduced structured programming concepts and first high level language into Electronic Switching Systems.

Grants and Awards

- Loyola University Chicago, Faculty Research Leave, Spring 2016, for funded research sabbatical titled "Software Engineering Metrics and the Human Aspect for Distributed Global Mobile Development - 'We cannot forget the human aspect: software developers are humans not robots'" for research work at Keio University, Shibaura Institute of Technology, and Waseda University, Japan (three leading engineering research universities).

- Google App Inventor Course Development Award, Student Engagement in Mobile App Creation, 2011. $10,000

- Collaborative Research: BPC-A: Improving Metropolitan Participation to Accelerate Computer Throughput and Success. Co-PI, National Science Foundation, 2008 – 2010, $300,000

- ExCEL – Excellence in Computing at Every Level. Senior Staff, National Science Foundation, 2008 – 2011, $600,000

- Department of Computer Science Distinguished Lectures Series. PI, Loyola University Chicago, 2008 – 2009, $3,000

- Hewlett Packard Technology for Teaching Grant, $74,000, with Drs. K. Laufer and G. Thiruvathukal, " Learning the Wonders of Computing with Wireless Collaboration", 2007-2008.

- Loyola University Chicago Summer Research Stipend, "Data Mining of Software Engineering Metrics from Large Team Development Projects", Summer 2007.

- AT&T CampInfinity Research Grant, April to October 2005, $25,000. PI of grant to design and conduct summer day camps for Chicago area young women with goal of interesting them in science careers. Camp also provided growth opportunities for Loyola students who organized and ran the camps.

- Computer Science Tutoring to Executives, Grant and Gift, $1000. Initiated program to tutor executives in basic computer skills using university students.

- Loyola University Chicago Evoke Faculty Incentive Grant, July 2005 to October 2005, $2600. Funded research leading to development of multiple course modules for use in helping students determine their "calling" to a computing profession. Multiple modules developed that may be used in computer science courses and other sciences.

- Cook County (Illinois) Treasurer's Office, CIO Internship Program, August 2003 to August 2004, $150,000. PI of grant to develop "real world" internship and work experience mechanism for both graduate and undergraduate computer science students. Supported over 20 students as equal members in system development and deployment teams.

- City of Chicago, After Schools Matters, TECH 37 Grant, December 2001. Co-recipient of grant for innovative program to generate excitement for technology in high school students. Project combines Java programming skills and robotics in an industry-like setting for students. Successfully instilled desire to learn mathematical and computer career skills in junior and senior year high school students.

Peer Reviewed Publications

- W. Honig, N. Noda, and S. Takada. 2016. Lack of Attention to Singular (or Atomic) Requirements Despite Benefits for Quality, Metrics and Management. *SIGSOFT Softw. Eng. Notes* 41, 4 (August 2016), 1-5. DOI: http://dx.doi.org/10.1145/2967307.2967315

- W. Honig, K. Laufer, G. Thiruvathukal, A Framework Architecture for Student Learning in Distributed Embedded Systems, SIES'2015: 10th IEEE International Symposium on Industrial Embedded Systems, IEEEXplore 2015, DOI= http://dx.doi.org/10.1109/SIES.2015.7185052

- W. Honig, Teaching and Assessing Programming Fundamentals for Non Majors with Visual Programming, ACM SIGSCE ITiCSE Annual Conference on Innovation and Technology in Computer Science Education, 40-45 June 2013.

- E.A. Brand, W. L. Honig, M. Wotowicz, Intelligent System Development in a Non-Engineering Curriculum, SIGCSE Bulletin, 16th Annual Conference at Innovation and Technology in Computer Science Education (ITiCSE 2011).

- W. L. Honig, Teaching Successful "Real-World" Software Engineering to the "Net" Generation: Process and Quality Win!, Proceedings of the 21st IEEE-CS Conference on Computer Software Engineering Education and Training (CSEE&T 2008) April 14-17 2008, Charleston, SC, USA.

- W. L. Honig and T. Prasad, A Classroom Outsourcing Experience for Software Engineering Learning, SIGCSE Bulletin, v39, n3 (Sept 2007). Presented at 12th Annual Conference on Innovation and Technology in Computer Science Education (ITiCSE 2007), Dundee, Scotland, 25-27 June 2007.

- W. L. Honig, Teaching Successful "Real-World" Software Engineering to the "Net" Generation: Process and Quality Win!, Proceedings of the 21st IEEE-CS Conference on Computer Software Engineering Education and Training (CSEE&T 2008) April 14-17 2008, Charleston, SC, USA.

- P. A. Russo, K. Bechard, E. Brooks, R. L. Corn, W. L. Honig, and J. Young, "IN Rollout in the United States", Communications Magazine, IEEE, Volume 31, Issue 3 (March 1993), pp. 56-63.

- William L. Honig and Barton G. Prieve, "The Realities of Service Creation on Switching Systems Through Attached Processors", Proceedings of the XII International Switching Symposium, Vol. VI, June 1990, pp. 51-54.

- William L. Honig, "Use of CHILL in Large Telecommunications Projects", Proceedings of the 1984 Global Communication Conference (GLOBE COM '84), October 1984, pp. 1021-1023.

- William L. Honig and C. Robert Carlson, "Toward an Understanding of (Actual) Data Structures", The Computer Journal 21,2 (1977), pp. 98-104. Reviewed in Computing Reviews, Nov. 1978.

- William L. Honig, "Bringing Data Base Technology to the Programmer", FDT 6,3 (1974) (journal of ACM SIGFDT), pp. 2-15.

Presentations, Standards Panels, Government Reports

- Metrics, Software Engineering, Small Systems – the Future of Systems Development, Keio University, Undergraduate Symposium, June 2016, Retrieved from Loyola eCommons, Computer Science: Faculty Publications and Other Works.

- Hands-on Creation of Android Apps for Novices using App Inventor, Chicago Chapter Association for Computing Machinery, with Dr. Ronald Greenberg, September, 2012.

- Learning the Wonders of Wireless Computing 24 x 7 Online! Poster Session. HP Annual Teaching With Technology Conference, San Diego, California, February 2007.

- Challenges of Student "Ownership" of HP Tablets for a Full Semester. Workshop. HP Annual Teaching With Technology Conference, San Diego, California, February 2007.

- What Works Best with TSPi for Small Team Productivity and Quality, Team Software Process Symposium 2006, September 2006.

- Business as a Calling, talk and report, Loyola University Chicago, November 2004.

- Ethical Hacking – is it every permissible to break into a computer?, presented paper at A Calling to Justice, Loyola University Chicago, March 2004.

- Making it in the Real World, 14 Feb 2002, Internship and Career Center, panel and presentation to students

- Experiences of a First-time Teacher Using TSPi, Software Engineering Institute Workshop on Personal Software Process (PSP) and Team Software Process (TSP), Illinois State University, March 2002.

- Internet and IP Tutorial, one day course, International Telecommunications Union (ITU) 7th Regional Meeting, Vientiene, Laos, October 2000.

- Future Technology Showcase, two day introduction to Third Generation Wireless for telecommunications executives, Mumbai, India, August 2000.

- 3G Revenue Generation - New Applications and Services, presentation and paper, Asia Pacific Telecommunity (government and advisory board for Southeast Asia), Phuket, Thailand, April 2000.

- The Other Part of the 3G Migration Story: The Core Network Evolution, keynote address, Telecomex Asia (industry trade show), Manila, Philippines, May 2000.

- Revenue Generating Applications for Wireless, tutorial session at Asia Comm / Expo Comm (industry trade show), Seoul, Korea, April 2000.

- Radio Spectrum, Applications and Revenue for 3G, policy recommendations to Hong Kong Office of Telecommunications (OF-TEL), Hong Kong, February 2000.

- Introduction to IP and Role in Wireless Communications, briefing to Peoples Republic of China telecommunications operators and government ministries, Beijing, December 1999.

- Wireless Solutions for Mass Telephony, recommendations to Vietnam Telecommunications Minister, and VNPT, Chicago, September 1999.

- Introduction of CDMA to China, two day program on air interface, network, and applications, presented in 12 cities across Peoples Republic of China, April and May 1999.

Corporate Technical Memoranda

- Bell Telephone Laboratories, 1969 to 1976: Over 100 technical memorandum on following topics:
  - Programming Methodology and Structured Programming
  - Software Testing and Program Correctness
  - User Manuals for Software Tools (Assemblers, Compilers, Simulators)
  - High Level Languages for Switching System Software
  - Compiler Construction, especially code generation
  - Data Structures and Data Base Management Systems for Real Time Applications

Regression Testing of Telecommunications Software

- International Telephone and Telegraph, 1976 - 1979: Over 50 technical memorandum on following topics:
    Automatic Test Case Generation
    Simulation Techniques for Real Time Systems
    Computer Center Design and Requirements
    Data Communications Networks
    CHILL Programming Language
    Finite State Software Models
    Problem Oriented Languages
    Telephony Call Processing Software
    Telephony Signaling Protocols

- GTE Corporation, 1979 to 1988: Over 30 technical memorandum on following topics:
    Network Control of Packet Networks
    Software Packaging and Distribution
    System Testing and Quality Assurance
    Configuration Management
    System Cost Prediction Methodology
    Entrepreneurial Techniques for Large Corporations
    Telephone Network Evolution to Data
    Integrated Services Digital Network (ISDN)
    Fiber Optic Network Services for Reliability
    Technology Transfer from R&D Laboratories

- U S WEST, 1988 to 1993: Over 40 technical memorandum on following topics:
    Advanced Intelligent Network Architecture
    Switching System Architecture Evolution
    Distributed Computing Environments
    User Interface Optimization for Service Staff
    Corporate Data Model Definition and Optimization
    Cost Analysis for Data Center Operations and Consolidation

- Motorola Inc., 1993 to 2001: Over 100 reports and presentations on following topics:
    Market and Product Prioritization
    Product Portfolio Analysis for Revenue and Return on Investment
    Geographic Market Analysis for China, Southeast Asia, Australia
    Third Generation Wireless Core Network Architecture
    IP Network Solutions for Wireless
    Comparisons of GSM and CDMA Features
    Network Signaling Protocols for Wireless
    Revenue Generating Wireless Services
    Ground Testing Methods for Satellite Software Systems
    Revenue Models for Satellite Service Offerings
    Integration Testing for Separately Contracted System Components

Professional Affiliations

Association for Computing Machinery (ACM), 1970 to present. Organizer of numerous technical conference sessions; former review contributor for Computing Reviews.

Institute of Electrical and Electronic Engineers (IEEE), IEEE Computer Society, IEEE Communications Society, 1976 to present. General Chair GLOBE COM '91 and participant on conference planning committees.

Teaching, Course Development

- Created new course in Robotic Software Development, using advance humanoid robot NAO. Introduced students to theory of robotics and practical development issues.
- Created new course in Microcontroller Development using Arduino open source hardware and software. Students developed custom intelligent systems and learned small scale programming for embedded systems.
- Created new course in Mobile Software Development, including all leading mobile device operating systems (Windows Mobile, Google Android, Symbian), 2008.
- Developed specialized course for Loyola University Chicago Freshman seminar including exploration of proper use of wireless technology for academics, 2008.
- Updated department plans and approach to teaching Introduction to Computing (COMP 150), a new university core course. Course now less programming intensive and more accessible to non computer science majors.
- Created Software Systems Analysis and Design course and offered if for the first time ever at Loyola in 2005. Introduces students to real world Unified Modeling Language use and incorporates design criteria suitable for academic classroom use.
- Created new version of Software Engineering course for undergraduates that included "outsource experience". Implemented course in cooperation with colleague from University of Wisconsin in Spring 2005.
- Software Engineering courses at graduate and undergraduate level, 2003 to 2004. Totally revamped and updated courses, providing distinct differences between graduate and undergraduate content while still ensure "real world" experience for students.
- Honors Program Contract Projects, Spring 2002, Student study and paper on comparison of software engineering techniques with two undergraduate honors students.
- Independent Study Project, Spring 2002, Graduate student research on Team Software Process (TSPi) and its use in academic environments.
- Data Abstraction and Object Oriented Programming (COMP 272), Spring 2002. "Learn real world object oriented software development methods, UML design, and C++; understand how to plan and schedule you personal software projects".
- Software Engineering (COMP 330), Spring 2002. "Experience high quality team software development doing a semester length project using real world software processes and industrial techniques."
- Graduate Software Engineering (COMP 474), Spring 2002. "Use the Team Software Process, Introductory (TSPi), be a member of a large software team, and experience two real world software life cycles".
- Data Abstraction and Object Oriented Programming (COMP 272), Fall 2001. C++ programming and object oriented design successfully coupled with real world software disciplines including programming style and a light weight personal software development process.

- Graduate Software Engineering (COMP 474), Fall 2001. Brought student excitement back to course that had suffered difficult history. Introduced real world software quality and process concepts and large team programming experience.

Service (Academic and Professional)

- Chair Department of Computer Science Graduate Program Committee to improve graduate education and introduce new online programs.
- Judge for Alpha Sigma Nu Jesuit Book Awards, 2005 to present, serving as second or final tier judge in science and mathematics area.
- Evaluated size of undergraduate degrees in computer science and generated comparison to the field using the ACM Curriculum guidelines and comparable schools.
- Created initial response to department's first external review, reflecting on 7 years since it's creation. Initiated faster movement into computer engineering.
- Developed process to implement university core course assessment for all department courses, November 2008.
- Advisor and contributor to Loyola University Office of International Programs, ongoing.
- Created new course for enhanced Freshman Seminar program aimed to increase Freshman retention. Course combined human responsibility and mobile communications, August 2007.
- Served university Diversity Office as Super Star Mentor to support advanced seniors who themselves were mentoring freshmen from underrepresented groups, 2007, 2008.
- Organized and chaired summer faculty workshop, sponsored by the Software Engineering Institute to broaden use of TSP/PSP in academia, Summer 2007.
- Program committee member for TSP/PSP Symposium, September 2007.
- Paper reviewer for "A Calling to Justice" conference, February 2005, and February 2006.
- Developed new cooperative program with Loyola Information Technology Services in Fall 2005 to employ computer science students as laboratory monitors.
- Organized technical presentation by students to National Seminar on Jesuit Higher Education covering Blackboard and its use as a publication support and communications tool in Fall 2005.
- Presented "Day in Class" to parents of new students during summer enrollment, Summer 2005.
- Chairperson, Department of Computer Science, Loyola University Chicago, 2002 – 2005. First chair of new department offering master and bachelor degrees in computer science. Lead creation of eight new majors to move department closer to needs of professional students while maintaining academic rigor.
- Undergraduate Program Director, Department of Computer Science, Loyola University Chicago, 2003. While serving as chair, took over undergraduate program leadership due to change in interest of faculty members. Improved advising and sense of service in the department by greater focus on students.
- Site Coordinator, ACM Midwest Regional Programming Contest, 2003 and 2004. Host regional contest with teams participating from regional universities.
- Faculty Advisor, Chinese Student Scholar Association, 2001 – 2004; Indian Graduate Student Association, 2002 – 2003.
- Consultant on Computer Science Academics, Keyna Methodist University.

- Loyola University Chicago, Information Services, FACIT Committee, ongoing. Represent both academic needs and technology inputs to most senior.