JAMES H. GARRETT, JR.

Provost

Thomas Lord Professor of
Civil and Environmental Engineering

Carnegie Mellon University
College of Engineering

Curriculum Vitae

Office of the Provost
Carnegie Mellon University
Pittsburgh, PA 15213-3890
Phone: (412) 268-3260
garrett@cmu.edu

BIOGRAPHICAL DATA

Place and Date of Birth

Pittsburgh, PA   January 12, 1961

EDUCATION

Degree	Discipline	University	Date
B.S.	Civil Engineering	Carnegie Mellon University	1982
M.S.	Civil Engineering	Carnegie Mellon University	1983
Ph.D.	Civil Engineering	Carnegie Mellon University	1986

EXPERIENCE

January 2019—present
Provost, Carnegie Mellon University

January 2013–December 2018
Dean, College of Engineering, Carnegie Mellon University

June 2006–December 2012
Head, Department of Civil and Environmental Engineering, Carnegie Mellon University

April 2004–July 2004
Acting Dean, College of Engineering, Carnegie Mellon University

July 2000–June 2006
Associate Dean for Academic Affairs, College of Engineering, Carnegie Mellon University

July 1996–present
Professor, Department of Civil and Environmental Engineering, Carnegie Mellon University

July 1993–July 1996
Associate Professor, Department of Civil and Environmental Engineering, Carnegie Mellon University

July 1990–July 1993
Assistant Professor, Department of Civil and Environmental Engineering, Carnegie Mellon University

August 1987–July 1990
Assistant Professor, Department of Civil Engineering, University of Illinois at Urbana-Champaign

October 1986–August 1987
Project Engineer, Schlumberger Well Services, Houston Downhole Sensors, 5000 Gulf Freeway, Houston, TX 77252. Developed knowledge-based engineering design systems using advanced knowledge-based system environments developed in-house at Schlumberger.

CONSULTING ASSIGNMENTS

July 1996–2001

Baker Engineering, Inc.
Coraopolis, PA

Presented a short course on Object-Oriented Software Engineering. Consulted with them on the object-oriented design of a bridge rating/design system (OPIS/VIRTIS).

February 1994–1999

ERES Consultants
Champaign, IL

Consulted with Dr. Michael Darter and his co-workers on the development of an expert system for pavement design.

November 1993–1999

Digital Site Systems, Inc.
Pittsburgh, PA

Consulted with Dr. Farro Radjy concerning the use of neural networks for predicting the properties of curing concrete from sensing data.

March 1986–May 1986

American Institute of Steel Construction
Chicago, IL

Developed the seated beam connection design tables found in the Load and Resistance Factor Design Specification (LRFD). This work involved researching the methods used to develop the set of tables in the previous version of the Allowable Stress Design (ASD) Specification and then modifying these methods to properly take into account the LRFD methods.

January 1985–December 1985

Tenera Corporation
Washington, DC

Developed a preliminary specification for a standards representation and processing environment for use by AISC in modeling their LRFD specification. Also developed and demonstrated a prototype of such a system for early project evaluation purposes. AISC has since gone on to redesign and develop such a system, marketed as ELRFD.

PROFESSIONAL ENGINEERING LICENSURE

State	Number	Status
Texas	PE-P0102732	Inactive

AWARDS, PRIZES, HONORS

2018 Elected Distinguished Member of the American Society of Civil Engineers

2016 Elected Fellow of the American Association for the Advancement of Science

2016 William Metcalf Award, Engineers' Society of Western Pennsylvania

2014   Civil Engineer of the Year, American Society of Civil Engineers, Pittsburgh Section

2014   Recognition Award, American Society of Civil Engineers. In recognition of outstanding dedication and leadership as co-editor-in-chief of ASCE Journal of Computing in Civil Engineering

2012   Alexander von Humboldt Research Award

2010   Awarded the Thomas Lord Professorship of Civil and Environmental Engineering, Carnegie Mellon University

2009   Elected to ASCE Fellow Status

2007   Steven J. Fenves Award for Systems Research, Carnegie Institute of Technology, Carnegie Mellon University

2007   Professor of the Year, ASCE Pittsburgh Section

2006   ASCE Computing in Civil Engineering Award, June 2006

2002   Journal of Computing in Civil Engineering Best Paper Award for 2001 (co-recipient with Dr. Han Kiliccote) for a paper entitled: "The Standards Usage Language (SUL): An Abstraction Boundary between Design Systems and Standards Processors"

1994   Alexander von Humboldt Research Fellowship. Feb.1-July 31, 1994

1993   Wellington Prize, (Co-recipient with Prof. Rahim Benekohal and Mr. Jeffery Linkenheld), American Society of Civil Engineering, for a paper entitled "Knowledge-based Design of Signalized Intersections"

1992   IABSE Prize, International Association of Bridge and Structural Engineers for achievements in applying Expert Systems in Structural Engineering.

1990   Moisseiff Award, (Co-recipient with Prof. Steven J. Fenves), American Society of Civil Engineering Journal of Structural Engineering for paper entitled "Standard Independent Member Design"

1989   Presidential Young Investigator Award, National Science Foundation.

1988   Outstanding Civil Engineering Teacher Award, American Society of Civil Engineers, University of Illinois Student Chapter

PATENTS

S. Liu, B. Akinci, M. Berges, and J. H. Garrett, Jr. "Integrated Information Framework for Automated Performance Analysis of Heating, Ventilation, and Air Conditioning (HVAC) Systems", U.S. Patent No. 9,429,960, issued August 30, 2016.

J. Kovacevic, G. Lederman, J. Bielak, H. Noh, J. H. Garrett, Jr., F. Cerda, S. Chen, P. Rizzo. "A System to Enable Rail Infrastructure Monitoring Through the Dynamic Response of an Operational Train", U.S. Provisional Patent Serial No. 62/230,162, filed May 2015; U.S. Patent Application Serial No. 15/168,735, filed May 2016.

B. Akinci, J. H. Garrett, Jr., A. Akcamete, X. Liu. "A Formal Approach for Linking Building Information Models (BIMs) with Workorder (WO) Data to Enable Displaying and Querying WO Information in BIM", U.S. Patent Application, filed September 2011.

J. H. Garrett, Jr., R. Steeb. "Interface for a Construction Dataport: Navigating Through a Set of Construction Drawings at a Construction Site Using a Tablet Computer", U.S. Provisional Patent, filed June 2005.

D. M. Bullock, J. H. Garrett, Jr., C. T. Hendrickson. "Neural Network-based Vehicle Detection System and Method", U.S. Patent No. 5,448,484, issued September 5, 1995.

PROFESSIONAL MEMBERSHIPS

Fellow, American Association for the Advancement of Science

Distinguished Member, American Society of Civil Engineers

Association of Independent Technological Universities

American Society for Engineering Education

    Engineering Deans Council

    Public Policy Committee

Big 10+ Engineering Deans Council

Council on Competitiveness

Pittsburgh Technology Council

Engineers' Society of Western Pennsylvania

Global Engineering Deans Council

International Association of Bridge and Structural Engineers

    Working Group 6, Information Technology (Chair: 2001-2005, Vice-Chair: 1997-2001)

    Technical Committee (Vice-Chair: 2005-2008)

    Executive Board of the International Bridge Conference (IBC), 2007-2013

Technical Council on Computer Information Technology

    Expert Systems Committee

    Database Committee (Secretary: 1992-1994)

Structural Engineering Institute

    Emerging Computing Technology (Chair: 1991-1996)

PROFESSIONAL ACTIVITIES (2000-present)

Carnegie Mellon University

College of Engineering Committees

Chair, Executive Council (2014-present)

Chair, Communications Committee (2013-present)

Chair, Dean's Advocacy Council (2013-present)

Chair, Faculty Promotion, Tenure and Reappointment Review Committee (2013-present)

Chair, Joint Advisory Board, Carnegie Mellon University-Africa (2013-present)

Board of Directors, Carnegie Mellon University-Portugal (2013-present)

Executive Committee and Board, Sun Yat-sen University-Carnegie Mellon University Joint Institute of Engineering (2013-2017)

Co-Chair, Strategic Planning Committee (2013-2014)

Chair, Department of Biomedical Engineering Head Search Committee (2007)

Curriculum Review Committee (2002-2006)

Curriculum Assessment Coordination Committee (Chair 2000-2006)

Core Curriculum Review Committee (1998-2001)

ABET 2000 Committee (1998-2000)

University Committees

Board Member, Swartz Center for Entrepreneurship (2017-present)

Board Member, Carnegie Bosch Institute Governance Committee (2017-present)

Science@CMU Steering Committee (2017-present)

Task Force on Sponsored Research Contracting (2017-present)

Chair, Kavčić-Moura Endowment Fund Committee (2016-present)

ANSYS Hall construction

TCS Building construction

Governance Committee, PwC Risk and Regulatory Services Innovation Center (2016-present)

Gateway Project Development Committee (2015-2016)

President's University Leadership Council (2014-present)

Provost's Deans Council (2014-present)

Co-Chair of Research, Creativity, Innovation and Entrepreneurship Subcommittee of the University Strategic Planning Committee (2014-present)

Quality of Life Technology Council (2014)

MPC Corporation Board of Directors (2013-present)

Co-Chair, Vice Provost for Research Search Committee (2013-2014)

Co-Chair, Doherty Award Selection Committee (2013-2014)

Executive Steering Committee on Computing Services (2013-present)

University Faculty Promotion, Tenure and Reappointment Committee (2013-present)

Campus Design and Facility Development, Design Review Committee (2009-present)

Faculty/Staff Campaign Committee (2009-2012)

Andrew Carnegie Society Executive Board (2008-2014)

NCAA Faculty Athletics Representative for CMU (2008-2013)

Advisor for Student Chapter of Chi Epsilon, the Civil Engineering Honor Society (1991-1998, 2002-2012)

Diversity Advisory Council (2000-2006)

Co-Director of the University Choice Program (1999-2000)

Advisor for Student Chapter of Tau Beta Pi, the Engineering Honor Society (1998-2006)

University Education Committee (Vice Chair: 1997-1999, Member 1997-2000)

External Service

Member, External Review Committee, Department of Civil Engineering, University of Toronto (Canada) (March 2018)

Member, National Outstanding Teaching Award Committee, American Society for Engineering Education (June 2017-June 2020)

Director, Engineering Deans Council Executive Board, American Society for Engineering Education (June 2017-June 2019)

Treasurer, Association of Engineering Colleges of Pennsylvania (June 2016-present)

Chair, External Review Committee; School of Civil and Environmental Engineering, Georgia Institute of Technology (January 2016)

Elected Board Member, Pittsburgh Technology Council (April 2015-present)

Executive Leadership in Academic Technology and Engineering (ELATE at Drexel) National Advisory Board (2015-present)

American Society for Engineering Education Public Policy Committee (2015-present)

Committee on the Application of Real-Time Monitoring of Offshore Oil and Gas Operations, National Academies Transportation Research Board (2014-2015)

External Reviewer, Case Western Reserve University, Case School of Engineering (2014-2017)

ABET Academic Advisory Council (2013-present)

Committee for Intelligent Construction Systems and Technologies: Program Review, National Academies Transportation Research Board (February 2013-February 2014)

Expert Panel to evaluate the NSF Funded National Earthquake Engineering Simulation (NEES) program, Science and Technology Policy Institute/Institute for Defense Analysis (2011)

College of Engineering Advisory Board at Northeastern University (2011)

Department of Architectural Engineering Advisory Board at The Pennsylvania State University (2011)

External Examination Committee for the Civil and Environmental Engineering Program at the Queens College Cork (2009)

External Review Board for the Research Activity of the Civil and Environmental Engineering Program at the Queens College Cork (2008)

External Review Board for the Architecture and Civil Engineering Program (ENAC) at the Ecole Polytechinue Federale Lausanne (EPFL) (2006)

Advisor, Future Cities Competition 2002-2004, St. Bede's Middle School

NRC panel to review the NIST Building and Fire Research Laboratory(2000-2001)

Conferences, Seminars and Presentations (2000-present)

35th CIB W78 Conference (IT in Design, Construction, and Management), Chicago, IL; Invited Keynote Speaker; October 2018

AAAS Annual Meeting, Austin, TX; February 2018

ASEE Public Policy Committee of Engineering Dean's Council, Washington, DC; Panel Moderator: "Legislative Update and Discussion"; February 2018

AITU Annual Meeting, Newport Beach, CA; January 2018

Big 10+ Engineering Dean's Council, Chicago, IL; October 2017

Congressional Manufacturing Caucus, Washington, DC; Invited Remarks at Briefing on Artificial Intelligence, Machine Learning, and the Future of Manufacturing; October 2017.

GEM National Conference, New York, NY; Invited Speaker; September 2017

Technovation Weekend, Pittsburgh, PA; Invited Panel Moderator; September 2017

ASEE Engineering Deans Institute Annual Conference, Coral Gables, FL; April 2017

Young President's Organization (YPO) Edge, Vancouver, BC, Canada; March 2017

AAAS Annual Meeting, Boston, MA; February 2017

ASEE Public Policy Committee of Engineering Dean's Council, Washington, DC; February 2017

AITU Annual Meeting, Singer Island, FL; January 2017

Big 10+ Engineering Dean's Council, Chicago, IL; October 2016

Invited keynote speaker, American Society of Highway Engineers National Conference, Pittsburgh, PA; May 2016.

Invited to present inaugural Paul P. Christiano Lecture, Carnegie Mellon-Qatar; April 2016.

ASEE Public Policy Committee of Engineering Dean's Council, Washington, DC; February 2016

Ethics for Design Professionals, American Society of Civil Engineers-Pittsburgh Section, Pittsburgh, PA, November 2015

International Driverless Cars Conference, Carnegie Mellon University-Australia, Adelaide, Australia; November 2015

Case Western Reserve University Innovation Summit, Cleveland, OH; October 2015

Big 10+ Engineering Dean's Council, Chicago, IL; October 2015

ASEE Public Policy Committee of Engineering Dean's Council, Washington, DC; September 2015

Presentation, "Carnegie Mellon University College of Engineering Research Review", Young Presidents' Organization/World Presidents' Organization Partner Center of Excellence—Faculty to Global Leaders Program; September 2015

White House Smart Cities Forum, Washington, DC; September 2015

Presentation, "Carnegie Mellon University College of Engineering Research Review", Bauhaus University, Weimer, Germany; August 2015

Presentation, "Carnegie Mellon University College of Engineering Research Review", University of Strathclyde, Glasgow, Scotland; August 2015

Panel Member, "Innovation for Prosperity". Council on Competitiveness: Exploring Innovation Frontiers Initiative, Atlanta, GA; June 2015

Panel Moderator, Washington Speakers Series, Washington, DC; May 2015

ASEE Engineering Dean's Institute, Kiawah Island, SC; April 2015

Academic Impressions Fundraising for Deans Workshop, New Orleans, LA; April 2015

National Academy of Engineering, "Educating Engineers to Meet the Grand Challenges", Washington, DC; March 2015

Executive Leadership in Academic Technology and Engineering (ELATE) Leaders Forum, Philadelphia, PA; March 2015

ASCE Civil Engineer of the Year Awards, Pittsburgh, PA; February 2015

ASEE Dean's Public Policy Colloquium, Washington, DC; February 2015

Yachay Technical University, Quito, Ecuador; February 2015

AITU Annual Meeting, Clearwater Beach, FL; January 2015

National Taiwan University, Metro21 and Urban Systems Presentation; January 2015

Panel Moderator, "Learning Science for Better Learning". Association of Independent Technological Universities Annual Meeting, Clearwater, FL; January 2015.

Real World Engineering Experience for Undergraduates, Pittsburgh, PA; October 2014

Presenter, CMU IdeasLab: Data Science in Action, "Making Smarter Decisions on Infrastructure". World Economic Forum Annual Meeting of New Champions, Tianjin, China; September 2014.

Panel Moderator, Washington Speakers Series, Washington, DC; September 2014

NSF Workshop on Big Data and Urban Informatics, Chicago, IL; August 2014

15th International Conference on Computing in Civil and Building Engineering, Orlando, FL; June 2014.

ICCCBE/ASCE/CIB Computing Conference, Orlando, FL; June 2014

Urban Systems Meeting, Pittsburgh, PA; April 2014

ASEE Engineering Dean's Institute, Scottsdale, AZ; April 2014

Executive Leadership in Academic Technology and Engineering (ELATE) Leaders Forum, Philadelphia, PA; March 2014

Real World Engineering Experience for Undergraduates, Washington, DC; March 2014

Panel Moderator, Washington Speakers Series, Washington, DC; March 2014

ASEE Dean's Public Policy Colloquium, Washington, DC; February 2014

AITU Annual Meeting, Sanibel Island, FL; January 2014

Consultations on People-to-People Exchange with China, Bureau of Educational and Cultural Affairs, U.S. Department of State; November 2013

ASEE Global Leadership Forum, Arlington, VA; November 2013

Real World Engineering Experience for Undergraduates, Pittsburgh, PA; October 2013

Asia-Pacific Economic Cooperation (APEC), 48th Meeting of Telecommunications and Information Working Group, Honolulu, HI; September 2013

ASEE Annual Meeting, Atlanta, GA; June 2013

Integrating Built Infrastructure with ICT: Overview of the Pennsylvania Smarter Infrastructure Incubator (PSII), Invited talk at Illinois Institute of Technology, Chicago, IL, on November 28, 2012.

Creating smarter facilities and infrastructure using sensors, data analytics, visualization and intelligent decision support: Opportunities, challenges, and recent research at Carnegie Mellon University. Keynote address at CONVR2012, the Conference on Virtual Reality for Construction, November 1-3, 2012, Taipei, Taiwan.

Integrating Built Infrastructure with ICT: Overview of the Pennsylvania Smarter Infrastructure Incubator (PSII), Invited talk at Kyoto University, Kyoto, Japan on Oct 29, 2012.

Smarter Infrastructure in Cities of the Future: Needs, Approaches, Challenges and Opportunities, 2011 International Forum for Shanghai Strategic Planning: Innovation and Transformation, Shanghai, China, December 12-13, 2011 (invited).

A Formal Approach to the Interactions Between BIM and Models of Building Regulations, The 2nd Glodon Summit Forum: BIM Leading Project Management, Beijing, China, July 8-9, 2011 (invited).

Innovations in Building Information Capture and Representation, US-Nigeria International Workshop on INNOVATIVE DESIGN APPROACHES TO SUSTAINABLE BUILDINGS, Abuja, Nigeria, Invited, November 29-December 1, 2010.

A future challenge for informatics: harnessing massive operational and condition data to better manage the infrastructure life-cycle, International Conference on Computing in Civil and Building Engineering, Keynote Address, Nottingham, UK, July 2010.

SensorAndrew: A virtual instrument for large-scale sensing and actuation that enables sensor-based decision support for built infrastructure, IBM Research, December 1, 2009. (invited)

A Nervous System for our Infrastructure, Invited Lecture, IBM Research, March 9, 2009. (invited)

A Nervous System for our Infrastructure, Distinguished Lecture, University of Texas Austin, Department of Civil, Architectural and Environmental Engineering, November 11, 2008.

Proactive Sensor Data Driven Management of Infrastructure Systems, delivered at the PSC (May 2006), Qatar (June 2006) and Trinidad and Tobago (August 2006), DC CMU Alumni Group (January 2007), KAIST (June 2007).

Advanced Infrastructure Systems Research at Carnegie Mellon, Invited Lecture at the Department of Civil and Environmental Engineering, University of Michigan, October 2006.

"An Overview of the Research in Mobile/Wearable Computer-Aided Engineering Systems," Invited Presentation to the IMAC Lab, Swiss Federal Institute of Technology, July 14, 2003.

"ASDMCon: Advanced Sensor Based Defect Detection and Management at Construction Sites, Invited Presentation to the IMAC Lab, Swiss Federal Institute of Technology, July 25, 2003.

"A Summary of the Vision and Directions for IT in Civil Engineering", Invited Keynote at the Fourth Joint International Symposium on Information Technology in Civil Engineering: Towards a Vision for Information Technology in Civil Engineering, November 16, 2003.

"An Overview of the Research in Mobile/Wearable Computer-Aided Engineering Systems in the Advanced Infrastructure Systems Lab at Carnegie Mellon University," Invited Keynote Lecture at the Bauen mit Computern (Computer-Aided Construction) Conference, Bonn, Germany, April 11-12, 2002.

"Mobile and Wearable Computing for Construction Sites: Opportunities, Challenges and Examples," Hochtief Research, Essen, Germany, October 2001, invited.

"Enabling Technologies and Innovative Sensor Systems for Monitoring Built Infrastructure," German American Frontiers of Engineering, Essen, Germany, October 2001, invited.

"Ubiquitous Computing for the Constructed Infrastructure: Needs and Opportunities," Department of Mechanical Engineering, Lehigh University, March 2001, invited.

"Mobile and Wearable Computing for Construction Sites: Opportunities, Challenges and Examples," Department of Civil Engineering, Bauhaus University, Weimar, Germany, March 2001, invited.

"Issues in Delivering Mobile IT Systems to Field Users," Keynote Address at IKM 2000: International Colloquium on the Applications of Computer Science and Mathematics in Architecture and Civil Engineering, June 2000.

"Embedded Microdevices for Infrastructure Monitoring," Transportation Research Board, January 2000

"Issues in Delivering Mobile IT Systems to Field Users," Keynote Address at IKM 2000: International Colloquium on the Applications of Computer Science and Mathematics in Architecture and Civil Engineering, June 24, 2000.

Editorial Roles on Publications, Major Activities in Professional Meetings

Co-Editor-in-Chief, ASCE Journal of Computing in Civil Engineering, 2008-2013.

E-Learning Editorial Board, International Association for Bridge and Structural Engineering (IABSE), November 2007-October 2015.

Tactical Plan Editor, Intelligent and Automated Construction Job Site element in the Capital Projects Technology Roadmap Initiative, FIATECH, 2003-2004.

Associate Editor for the ASCE Journal of Structural Engineering, October 1997 - October 2000.

Contributing Editor for the ASCE Journal of Computing in Civil Engineering, September 1995 - May 1998, in charge of Best Paper Award.

Guest Editor (with Ian Smith) for the IEEE Expert Magazine, Special Track on "Artificial Applications in Civil Engineering," Vol 11, Nos. 3 and 4.

Guest Editor for the Journal of Computing in Civil Engineering, Special Issue on "Neural Networks in Civil Engineering," Vol. 8, No. 2, April 1994.

Guest editor (with M. L. Maher) for the Journal of Computing in Civil Engineering, Special Issue on "Knowledge-based Approaches to Design and Planning," Vol. 5, No. 1, Jan. 1991.

STUDENTS SUPERVISED

Undergraduate Students

1. Michael Miller, "A Hypertext Representation of Engineering Design Standards," Senior Project, Fall 1991.

2. Annie Pearce, "Video-Based Vehicle Detection using Neural Networks," CIT Honors Research Project, Fall 1991 - Spring 1992.

3. Douglas Vunic, "Neural Network-based Interpretation of Concrete Heat Signatures," Senior Project, Fall 1992.

4. Richard Quinn, "Applying the AES Structural Package to the Smithfield St. Bridge," Senior Project, Spring 1993.

5. Wendy Burton, "Developing a Detailed Classification System for the Pennsylvania Landfill Regulations," Senior Project, Fall 1995.

6. Heather Blair, Liam Lim, Laura Miyakawa, CIT Honors Research Project AY 2000-01, "MEMS-based Vehicle Detection at Intersections," co-advised with Chris Hendrickson.

7. Douglas Holman, ECE, CIT Honors Research Project AY 2003-2004, "Construction Dataport."

8. Russell "Tye" Tutt, CEE, Independent Study on Vehicles as Sensors Project, 2009-2010.

Master's Students

1. Nenad Ivezic, "NETSYN - A Neural Network Approach for Engineering Synthesis Knowledge Acquisition and Use," Oct. 1992.

2. Gary Hooyman, "An Object-Oriented User Interface for Standards Modeling," Sept. 1992.

3. Chih Chieh Tsai, "Interpretation of Ground Penetrating Radar Signals using Neural Networks," Jan. 1993.

4. Thomas Chmielenski, "A Standards Processing Environment Using a Context-Oriented Approach to Standards Modeling," September 1993.

5. Han Kiliccote, "A Context-Oriented Model of Engineering Design Standards," January 1994

6. Mark Krofchik, "Mosaic-based Standards Broker for Environmental Regulations," June 1995.

7. Dana Stasiak, "An Environmental Regulations Broker: Classification and Co-Word Analysis," September 1996.

8. Richard Quinn, "A Java-based System for Supporting Student Truss Analysis," August 1997.

9. Vei-Chung Liang, "A Java-based Environmental Regulation Broker," May 1998.

10. Douglas Sackin, "MEMS Applications in Civil Infrastructure," December 1999.

11. Richard Hallon, "The Potential Use of Moisture Sensors on PeopleMover Guideways: Experimentation and Cost/Benefit Analysis," December 2000.

12. DeWitt Latimer, "Estimating the Cost of Software Components in Civil System Development Using Function Point Analysis," May 2002.

13. Ping Chen, "WEB-VACUUM: A Web-based Environment for Assessing Civil Infrastructure Data Quality", Dec 2003.

14. Vincent Collins III, "Evaluation of Several technologies for the Maturity Method for Concrete Strength Determination", September 2004.

15. Jaime Wright, Assisted on the Augmented Reality Project for Bridge Inspection, July 2006

16. Mr. Saurabh Taneja (co-advised with Burcu Akinci), Sensor Fusion for HVAC System Modeling and Reconfiguration, May 2009.

17. Mr. Salih Demir (co-advised with Burcu Akinci), September 2009.

Ph.D. Students

1. Dr. Wayne Seiler (Advised jointly with Prof. M. I. Darter at the University of Illinois), "A Knowledge-Based Expert System for Airport Pavement Diagnosis"; November 1990.

2. Dr. Xiping Wu (Co-advised with Prof. J. Ghaboussi at the University of Illinois), "A Neural Network-based Approach to Material Modeling"; July 1991.

3. Dr. Jerry Yau (Co-advised with Prof. J. Melin at the University of Illinois), "Object-Oriented Model for Integrating Design, Scheduling and Cost Estimation"; March 1992.

4. Dr. S. Ranjithan (Co-advised with Prof. J. W. Eheart at the University of Illinois), "Neural Networks for Screening Distributed Parameter Fields with Application to Groundwater Remediation"; June 1992.

5. Dr. Rajaram Ganeshan (co-advised with Prof. Susan Finger), "Representing and Reasoning with Design Intent"; August 1992.

6. Dr. Maher Hakim, "Modeling Evolving Information about Engineering Design Products"; September 1993.

7. Dr. Nenad Ivezic, "Machine Learning for Supporting Collaborative Engineering Agents"; December 1995.

8. Dr. Han Kiliccote, "SPF:A Distributed Standards Processing Framework"; January 1997.

9. Dr. Octavio Juarez-Espinoza, "Development of User-Centered Environmental Software Systems" (co-advised with Prof. Chris Hendrickson); May 1999.

10. Dr. Jirapon Sunkpho, "A Framework for Rapid Development of Speech-Controlled Interfaces for Mobile Data Collection Systems" ;September 2001.

11. Dr. Rebecca Buchheit, "VACUUM: An Automated Procedure for Assessing and Cleansing Civil Infrastructure Monitoring Data"; May 2002.

12. Dr. Christian Bürgy, "Interaction Constraints Model for Designing Mobile IT Devices for Industrial Environments"; May 2002.

13. Dr. Jan Reinhardt, "Navigational Models for Accessing Construction Information On-Site" (co-advised with Prof. Burcu Akinci); December 2003.

14. Dr. Hongjun Wang, "Domain-Oriented Semi-Automated Model Matching for Supporting Building Commissioning-Related Data Exchange" (co-advised with Burcu Akinci); May 2006.

15. Dr. Ping Chen, "Assessment of Critical Infrastructure Interdependencies" (Dissertation Advisor was Scott Matthews; Garrett was an Academic Advisor); September 2006.

16. Dr, Vipul Singhvi, "Machine Learning Based Building Control Strategy" (co-advised with Scott Matthews); August 2006.

17. Dr. Chris Gordon, "A Formalism and a Framework for Planning of Sensor-Based Inspections on Construction Sites" (Co-advised with Burcu Akinci); December 2006.

18. Dr. Wei Guo, "Automated Defect Detection and Recognition for Wastewater Pipeline Inspection and Condition Assessment" (co-advised with Lucio Soibelman); August 2008.

19. Dr. Michael Bigrigg, "An Integrated Modeling Approach for Affordable Reliability in Infrastructure Systems with Sensor Networks" (co-Advised with Scott Matthews); May 2011.

20. Dr. Daniel Oliviera, "Spatial Data Analysis of Networked Infrastructure Failure Data: An Application for Condition Assessment of Drinking Water Distribution Systems" (co-advised with Lucio Soibelman); May 2010.

21. Dr. Chung-Yan Shih, "Geospatial Decision Support Framework for Critical Infrastructure Interdependency Assessment" (co-advised with Lucio Soibelman and Scott Matthews); May 2010.

22. Dr. Asli Akcamete, "A Formal Approach for Managing Facility Change Information and Capturing Change History as Part of Building Information Models (BIM)" (co-advised with Burcu Akinci); August 2011

23. Dr. Yujie Ying, "A Data-Driven Framework for Ultrasonic Structural Health Monitoring of Pipes" (co-advised with Lucio Soibelman and Irving Oppenheim); August 2012

24. Mr. Fernando Cerda, "Indirect Structural Health Monitoring of Bridges: Mathematical Models and Laboratory Experiments" (co-advised with Jacobo Bielak); September 2012

25. Mr. Xuesong Liu, "An Integrated Information Support Framework for Performance Analysis and Improvement of Secondary HVAC Systems" (co-advised with Burcu Akinci and Mario Berges); September 2012

26. Mr. Saurabh Taneja, (co-advised with Burcu Akinci), "A Framework for Fusing Sensing Data with Building Information: An Application for Indoor Localization"; May 2013.

27. Mr. Te Gao (co-advised with Semiha Ergan and Burcu Akinci), "Constructing a Complete and Accurate As-Built BIM Based on an As-Designed BIM and Progressive Laser Scans"; February 2014.

28. Mr. Elfatih Ahmed, "Structural Design and Economic Analysis of Suspension Bridges Constructed Using FRP Deck"; December 2014.

29. Mr. Engin Burak Anil (METU Dual Degree Student co-advised with Burcu Akinci), "Utilization of As-Is Building Information Models Obtained from Laser Scan Data for Evaluation of Earthquake Damaged Reinforced Concrete Buildings"; February 2015.

30. Ms. In-Soo Jung (co-advised with Mario Berges), "Anomaly Detection of Piezometer Data Collected from Embankment Dams"; May 2015.

31. Mr. George Lederman (initially a co-advisor with Jacobo Bielak and Haeyoung Noh for first several years, then only a committee member)", "Data-Driven Approaches for Track Monitoring Using In-Service Trains June 2016.

PUBLICATIONS (2000-present)

Archival Papers Critically Reviewed Before Publication

G. Lederman, S. Chen, J. Garrett, J. Kovačević, H-Y. Noh, J. Bielak. 2017. "A Data Fusion Approach for Track Monitoring from Multiple In-Service Trains", *Mech. Syst. Signal Process.*, Vol. 95, pp. 363-379. http://dx.doi.org/10.1016/j.ymssp.2017.03.023

G. Lederman, S. Chen, J. Garrett, J. Kovačević, H-Y. Noh, J. Bielak. 2017. "Track-Monitoring from the Dynamic Response of a Passing Train: A Sparse Approach", *Mech. Syst. Signal Process.*, Vol. 90, pp. 141-153. http://dx.doi.org/10.1016/j.ymssp.2016.12.009

G. Lederman, S. Chen, J. Garrett, J. Kovačević, H-Y. Noh, J. Bielak. 2017. "Track-Monitoring from the Dynamic Response of an Operational Train", *Mech. Syst. Signal Process.*, Vol. 87, pp. 1-16. http://dx.doi.org/10.1016/j.ymssp.2016.06.041

E. B. Anil, B. Akinci, J. H. Garrett, O. Kurc. 2016 "Information Requirements for Earthquake Damage Assessment of Structural Walls", *Adv. Eng. Inform.*, Vol 30, pp. 54-64. http://dx.doi.org/10.1016/j.aei.2015.12.002

S. Taneja, B. Akinci, J. H,. Garrett, Jr., L. Soibelman. 2016. "Algorithms for Automated Generation of Navigation Models from Building Information Models to Support Indoor Map-Matching", *Autom. Constr.*, Vol. 61, pp. 24-41. http://dx.doi.org/10.1016/j.autcon.2015.09.010

E. B. Anil, B. Akinci, O. Kurc, J. H. Garrett, Jr. 2015. "Building-Information-Modeling-Based Earthquake Damage Assessment for Reinforced Concrete Walls", *J. Comput. Civ. Eng.* http://dx.doi.org/10.1061/(ASCE)CP.1943-5487.0000551

S. Chen, F. Cerda, P. Rizzo, J. Bielak, J. H. Garrett, Jr. and J. Kovačević. 2014. "Semi-Supervised Multiresolution Classification Using Adaptive Graph Filtering with Application to Indirect Bridge Structural Health Monitoring", *IEEE Trans. Signal Process.*, 62(11), pp. 2879-2893. http://ieeexplore.ieee.org/xpls/abs_all.jsp?arnumber=6778068

Taneja, S., Akinci, B., Garrett, J., Soibelman, L., Jr., and Karimi, H. 2014. "Effects of Positioning Data Quality and Navigation Models on Map-Matching of Indoor Positioning Data." *J. Comput. Civ. Eng.*, 04014113. http://dx.doi.org/10.1061/(ASCE)CP.1943-5487.0000439

Liu, X., Akinci, B., Bergés, M., and Garrett, J., Jr. 2014. "Domain-Specific Querying Formalisms for Retrieving Information about HVAC Systems." *J. Comput. Civ. Eng.*, 28(1), pp. 40–49. http://dx.doi.org/10.1061/(ASCE)CP.1943-5487.0000294.

Gao, T., Ergan, S., Akinci, B., and Garrett, J. 2014. "Evaluation of Different Features for Matching Point Clouds to Building Information Models." *J. Comput. Civ. Eng.*, 04014107. http://dx.doi.org/10.1061/(ASCE)CP.1943-5487.0000425

F. Cerda, S. Chen, J. Bielak, J. H. Garrett, P. Rizzo, and J. Kovačević. 2014. "Indirect Structural Health Monitoring of a Simplified Laboratory-Scale Bridge Model". *Smart Structures and Systems, An International Journal*, Vol 13, No. 5, pp. 849-868. http://dx.doi.org/10.12989/sss.2014.13.5.849

Gao, T., Ergan, S., Akinci, B., and Garrett, J. 2014. "Proactive Productivity Management at Job Sites: Understanding Characteristics of Assumptions Made for Construction Processes During Planning Based on Case Studies and Interviews." *J. Constr. Eng. Manage.*, 140(3), 04013054. http://dx.doi.org/10.1061/(ASCE)CO.1943-7862.0000816

Garrett, J., Jr., Palmer, M., and Demir, S. 2014. "Delivering the Infrastructure for Digital Building Regulations". *J. Comput. Civ. Eng.*, 28(2), pp. 167–169. http://dx.doi.org/10.1061/(ASCE)CP.1943-5487.0000369

X. Liu, B. Akinci, M. Berges, and J. H. Garrett, Jr. 2013. "Extending the Information Delivery Manual Approach to Identify Information Requirements for Performance Analysis of HVAC Systems", *Advanced Engineering Informatics*, 27(4), pp. 496-505. doi:10.1016/j.aei.2013.05.003

Ying, Y., Garrett Jr., J. H., Oppenheim, I. J., Soibelman, L., Harley, J., Shi, J., and Jin, Y. 2013. "Toward Data-Driven Structural Health Monitoring: Application of Machine Learning and Signal Processing to Damage Detection." *J. Comput. Civ. Eng.* 27(6), pp. 667-680. http://dx.doi.org/10.1061/(ASCE)CP.1943-5487.0000258

Ying, Y., J. H. Garrett Jr., J. Harley, I. J. Oppenheim, J. Shi, and L. Soibelman. 2013. "Damage Detection in Pipes Under Changing Environmental Conditions Using Embedded Piezoelectric Transducers and Pattern Recognition Techniques." *J. Pipeline Syst. Eng. Pract.*, 4(1), pp. 17-23. http://dx.doi.org/10.1061/(ASCE)PS.1949-1204.0000106

Taneja, S., A. Akcamete, B. Akinci, J. H. Garrett, Jr, L. Soibelman, E. W. East. 2012. "Analysis of Three Indoor Localization Technologies for Supporting Operations and Maintenance Field Tasks", *J. Comput. Civ. Eng.*, 26(4), pp. 708-719. http://dx.doi.org/10.1061/(ASCE)CP.1943-5487.0000177

Shahandashti, M.S., S. N. Razavi, L. Soibelman, M. Berges, C. H. Caldas, I. Brilakis, J. Teizer, C. Haas, J. H. Garrett, Jr., B. Akinci, and Z. Zhu. 2011. "Data Fusion Approaches and Applications for Construction Engineering", *J. Constr. Eng. Manage.*, 137(10), Special Issue—Construction Engineering: Opportunity and Vision for Education, Practice, and Research, pp. 863-869. http://dx.doi.org/10.1061/(ASCE)CO.1943-7862.0000287

Taneja, S., B. Akinci, J.H. Garrett, L Soibelman, M. Berges, G. Atasoy, X. Liu, S.M. Shahandashti, E.B. Anil, E. Ergen, A. Pradhan, and P. Tang. 2011. "Sensing and Field Data Capture for Construction and Facility Operations," *J. Constr. Eng. Manage.*, 137(10), Special Issue—Construction Engineering: Opportunity and Vision for Education, Practice, and Research, pp. 870-881. http://dx.doi.org/10.1061/(ASCE)CO.1943-7862.0000332

Oliviera, D. P., L. Soibelman, and J. H. Garrett, Jr. 2011. "A Density-Based Spatial Clustering Approach for Defining Local Indicators of Drinking Water Distribution Pipe Breakage," *Advanced Engineering Informatics*, 25(2), pp. 380-389. doi:10.1016/j.aei.2010.09.001

de Oliviera, D. P., D. Neill, J. H. Garrett, Jr., and L. Soibelman. 2011. "Detection of Patterns in Water Distribution Pipe Breakage Using Spatial Scan Statistics for Point Events in a Physical Network", *J. Comput. Civ. Eng.*, 25(1), pp. 21-30. http://dx.doi.org/10.1061/(ASCE)CP.1943-5487.0000079

Anthony Rowe, Mario Berges, Gaurav Bhatia, Ethan Goldman, Raj Rajkumar, Lucio Soibelman, James H. Garrett, José M.F. Moura. 2011. "Sensor Andrew: Large-Scale Campus-Wide Sensing and Actuation." *IBM Journal of Research and Development*, 55(1.2), pp. 6:1-6:14. DOI: [10.1147/JRD.2010.2089662](10.1147/JRD.2010.2089662)

Bigrigg, M. W., H. S. Matthews, J. H. Garrett, Jr. "Fault perturbations in building sensor network data streams," Int. J. Sensor Networks, Vol. 7, No. 3, 2010

Guo, W., L. Soibelman, and J. H. Garrett, Jr. "Visual Pattern Recognition Supporting Defect Reporting and Condition Assessment of Wastewater Collection Systems", Journal of Computing in Civil Engineering, Vol. 23, No. 3. pp. 160-169, May/June 2009.

Shih, C-Y, C. D. Scown, L. Soibelman, H S. Matthews, J. H. Garrett Jr., K. Dodrill and S. McSurdy, "Data Management for Geospatial Vulnerability Assessment of Interdependencies in US Power Generation", Journal of Infrastructure Systems, Vol. 15, No 3, pp. 179-189, September 2009.

Chen, P., C. Scown, H. S. Matthews, J. H. Garrett, Jr. "Managing Critical Infrastructure Interdependence through Economic Input-Output Methods", Journal of Infrastructure Systems, Vol. 15, No 3, pp. 200-210, September 2009.

Bigrigg, M.W., H. S. Matthews, J. H. Garrett, Jr., "Data Imputation using in-exact replicas," Int. J. Intelligent Systems Technologies and Applications, Vol. 7, No. 1, 2009

Gordon, C., B. Akinci and J. H. Garrett, Jr., "Characterization and Search of Construction Inspection Plan Spaces Developed Using a Component-Based Planning Approach" Journal of Computing in Civil Engineering, Vol. 23, No. 4, July/August 2009.

Guo, W., L. Soibelman, and J. H. Garrett, Jr. "Automated Defect Detection for Sewer Pipeline Inspection and Condition Assessment," in Automation in Construction, vol. 18, no. 5, pp. 587–596, 2009.

Wang, H., B. Akinci and J. H. Garrett, Jr., K. Reed, E. Nyberg. "Semi-Automated Model Matching using Version Difference", in Advanced Engineering Informatics, Vol. 23, No. 11, pp. 1-11, January 2009.

Guo, W., L. Soibelman and J. H. Garrett, Jr., "Imagery Enhancement and Interpretation for Remote Visual Inspection of Aging Civil Infrastructure", Tsinghua Science and Technology, Elsevier, Vol. 13, No. S1, pp. 375-380, October 2008.

Wang, H., B. Akinci J. H. Garrett, Jr., and K. Reed "A Formalism for Applying Constraints in Domain-Oriented Schema Matching" Journal of Computing in Civil Engineering, Vol. 22, No. 3, pp. 170-180, May/June 2008.

Gordon, C.., B. Akinci and J. H. Garrett, Jr., "A formalism for construction inspection planning." Automation in Construction, Vol. 17, Issue 6, pg. 705-718, August 2008.

Wang, H., B. Akinci and J. H. Garrett, Jr., "A Formalism for Detecting Version Differences in Data Models", Journal of Computing in Civil Engineering, Vol. 21, No. 5, September/October 2007.

Gordon, C. J., B. Akinci and J. H. Garrett, Jr., "Formalism for construction inspection planning: requirements and process concept" Journal of Computing in Civil Engineering, Vol. 21, No. 1, pp. 29-38, January 2007.

Reinhardt, J, B. Akinci, and J. H. Garrett, Jr., "A Navigational Model for Providing Customized Representations for Effective and Efficient Interaction with Mobile Computing Solutions on Construction Sites," ASCE Journal of Computing in Civil Engineering, Volume 19, Number 2, pp. 109-118, 2005.

Singhvi, V., A. Krause, C. Guestrin, J. H. Garrett, Jr., H. S. Matthews. Intelligent Light Control Using Sensor Networks, SenSys'05, November 2–4, 2005, San Diego, California, USA.

Chen, P., R. B. Buchheit, J. H. Garrett, Jr., S. McNeil "Web Vacuum: A Web-Based Environment for Automated Assessment of Civil Infrastructure Data," ASCE Journal of Computing ion Civil Engineering, Volume 19, Number 2, pp. 137-147, 2005.

Buchheit, R. B., J. H. Garrett, Jr., S. McNeil, P. Chen, "An Automated Procedure to Assess Civil Infrastructure Data Quality," ASCE Journal of Infrastructure Systems, Vol. 11, No. 3, pp. 180-189, September 2005.

Sunkpho, J., J. H. Garrett, Jr., S. McNeil, "XML-Based Inspection Modeling for Developing Field Inspection Support Systems," ASCE Journal of Infrastructure Systems, Vol. 11, No. 3, pp. 190-200, September 2005.

Reinhardt, J., B. Akinci, J. H. Garrett, Jr., "Navigational models for computer supported project management tasks on construction sites," Vol. 18, No. 4, pp. 281-290, Journal of Computing in Civil Engineering, October 2004.

Yun, H, M. E. Patton, J. H. Garrett, Jr., G. K. Fedder, K. M. Frederick, J-J Hsu, I. J. Lowe, I. J. Oppenheim, P. Sides, "Detection of Free Chloride in Concrete by NMR," in the Journal of Cement and Concrete Research, Vol. 34, pp. 379-390, 2004.

Sunkpho, J., J. H. Garrett, Jr., "JIF: A Framework for Developing a Field Inspection Support System for Civil Systems Inspection." ASCE Journal of Computing in Civil Engineering , Vol. 17, No. 4, pp. 209-218, October 2003.

Subrahmanian, E., A. Westerberg, S.Talukdar, J. Garrett, A. Jacobson, C. Paredis, C. Amon, P. Herder, A. Turk, "Integrating Social Aspects and Group Work Aspects in Engineering Design Education," Int. J. Engng. Ed., Vol 19, No. 1, pp. 75-80, 2003.

Kiliccote, H. and J. H. Garrett, Jr., "Agents for Standards Processing," in International Journal of IT in Architecture, Engineering and Construction (IT-AEC): Special issue on Agents and Multi-Agent Systems in Construction, Millpress Science Publishers, pp. 9-26, January 2003

Kiliccote, H. and J. H. Garrett, Jr., "The Standards Usage Language (SUL): An Abstraction Boundary between Design Systems and Standards Processors" Journal of Computing in Civil Engineering , Vol 15, No. 2, pp. 118-128, 2001.

R. B. Buchheit, J. H. Garrett, Jr., S. R. Lee, and R. Brahme, "A Knowledge Discovery Framework for Civil Infrastructure," Engineering with Computers Journal, Vol. 16, pp. 264-274, 2000.

Liang, V.-C. and J. H. Garrett, Jr., "Java-based Environmental Regulations Broker," Journal of Computing in Civil Engineering, Vol. 14, No. 2, pp. 100-108, April 2000.

Conference Papers Critically Reviewed Before Publication

J. Liu, M. Berges, J. Bielak, J. H. Garrett, J. Kovacevic and H. Y. Noh. 2018. "A Damage Localization and Quantification Algorithm for Indirect Structural Health Monitoring of Bridges Using Multi-Task Learning". 45th Annual Review of Progress in Quantitative Nondestructive Evaluation, Burlington, VT, July 15-19, 2018.

Te Gao, Semiha Ergan, Burcu Akinci and James Garrett. 2014. "Accuracy Analysis of Using Progressively Captured Point Cloud Data for As-built BIM Update". International Symposium on Automation and Robotics in Construction (ISARC), Sydney, Australia, July 9-11, 2014.

S. Chen, A. Sandryhaila, G. Lederman, Z. Wang, J. M. F. Moura, P. Rizzo, J. Bielak, J. H. Garrett, and J. Kovačević. 2014. "Signal Inpainting on Graphs via Total Variation Minimization", Proc. IEEE Int. Conf. Acoust., Speech Signal Process., Florence, Italy, May 4-9, pp. 8267-8271. DOI: [10.1109/ICASSP.2014.6855213](https://doi.org/10.1109/ICASSP.2014.6855213)

G. Lederman, Z. Wang, S. Chen, T. Tang, F. Cerda, J. Bielak, J. H. Garrett, J. Kovačević, H. Noh, and P. Rizzo. 2014. "Damage Quantification and Localization Algorithms for Indirect SHM of Bridges", *Proc. Int. Conf. Bridge Maint., Safety Manag.,* Shanghai, China, July.

Engin Burak Anil, Burcu Akinci, James H. Garrett, Ozgur Kurc. "Characterization of laser scanners for detecting cracks for post-earthquake damage inspection," Pages 313-320, Proceedings of the 30th ISARC, August 11-15, 2013, Montréal, Canada.

Gao, Te, Burcu Akinci, Semiha Ergan, James H. Garrett. 2013. "A Framework to Generate Accurate and Complete As-built BIMs based on Progressive Laser Scans", International Symposium on Automation and Robotics in Construction (ISARC), Montréal, Quebec, Canada, August 11-15, pp. 849-856.

Jung, I-S, J. Frazier, B. Akinci, M. Berges, S. Ergan, J. H. Garrett, Jr., C. Kelly. 2013. "Towards Dam Information Modeling: Best Practices Learned From the AEC/FM Domain," International Commission on Large Dams (ICOLD), Seattle, WA, August 12-16.

Jung, I., M. E. Berges, J. H. Garrett, Jr., and C. Kelly. 2013. "Interpreting the Dynamics of Embankment Dams through a Time-Series Analysis of Piezometer Data Using a Non-Parametric Spectral Estimation Method". ASCE Conference on Computing in Civil Engineering, Los Angeles, CA, June 23-25, pp. 25–32. http://dx.doi.org/10.1061/9780784413029.004

Engin Burak Anil, Burcu Akinci, James H. Garrett, Ozgur Kurc. 2013. "Representation of Damage Information for Post-Earthquake Damage Assessment of Reinforced Concrete Frames," ASCE Conference on Computing in Civil Engineering, Los Angeles, CA, June 23-25, pp. 825-832. http://dx.doi.org/10.1061/9780784413029.103

Liu, C., J. Harley, Y. Ying, M. E. Berges, J. H. Garrett, Jr., D. W. Greve, I. J. Oppenheim, "Singular value decomposition for novelty detection in ultrasonic pipe monitoring", SPIE Smart Structures/NDE Conference, 8692-58, 2013.

Liu, C., J. Harley, Y. Ying, M. Altschul, M. E. Berges, J. H. Garrett, Jr., D. W. Greve, J. Moura, I. J. Oppenheim and L. Soibelman. 2013. "Ultrasonic Monitoring of a Pressurized Pipe in Operation", ASCE Structures Congress, Pittsburgh, PA, May 2-4, pp. 1903-1913. http://dx.doi.org/10.1061/9780784412848.167

Wang, Z., S. Chen, G. Lederman, F. Cerda, J. Bielak, J. H. Garrett, Jr., P. Rizzo, J. Kovačević. 2013. "Comparison of Sparse Representation and Fourier Discriminant Methods: Damage Location Classification in Indirect Lab-Scale Bridge Structural Health Monitoring", ASCE Structures Congress, Pittsburgh, PA, May 2-4, pp. 436-446. http://dx.doi.org/10.1061/9780784412848.039

S. Chen, F. Cerda, J. Guo, J. B. Harley, Q. Shi, P. Rizzo, J. Bielak, J. H. Garrett and J. Kovačević. 2013. "Multiresolution Classification with Semi-Supervised Learning for Indirect Bridge Structural health Monitoring". IEEE International Conference on Acoustics, Speech and Signal Processing, Vancouver, BC, Canada, May 26-31, pp. 3412-3416. DOI: 10.1109/ICASSP.2013.6638291

Liu, C., J. Harley, Y. Ying, N. O'Donoughue, M. Altschul, M. E. Berges, J. H. Garrett, Jr., D. W. Greve, J. M. F. Moura, I. J. Oppenheim, L. Soibelman, "Ultrasonic Scatterer Detection In a Pipe Under Operating Conditions Using PCA", AIP Qualitative Nondestructive Evaluation Conference, Vol. 1511, pp. 1454-61, 2013.

X. Liu, M. Berges, B. Akinci, J. Garrett, "An Integrated Performance Analysis Framework for HVAC Systems Using Heterogeneous Data Models and Building Automation Systems", submitted to Fourth ACM Workshop On Embedded Sensing Systems For Energy-Efficiency In Buildings 2012.

Liu, X., B. Akinci, J. Garrett, and M. Bergés (2012). "Requirements for A Formal Approach to Represent Information Exchange Requirements of a Self-managing Framework for HVAC Systems " 14th International Conference on Computing in Civil and Building Engineering 2012, 27-29, June 2012, Moscow, Russia.

Cerda, F., J. H. Garrett, Jr., J. Bielak, P. Rizzo, J. Barrera, Z. Zhuang, S. Chen, M. McCann, and J. Kovačević, "Indirect structural health monitoring in bridges: scale experiments," p 346 – 353, IABMAS 2012 – the 6th International Conference on Bridge Maintenance, Safety and Management, Villa Erba, Lake Como, Italy, July 8-12, 2012.

Gao, T., Akinci, B., Ergan, S., and Garrett, J. 2012. "Construction of As-is BIMs from Progressive Laser Scan Data", International Symposium of Automation and Robotics in Construction: ISARC, June 26-29, Eindhoven, the Netherlands, pp. 36-42.

Gao, T. S. Ergan, B. Akinci, J. H. Garrett, Jr., L. Soibelman. 2012. "Evaluation of Existing Sensor Ontologies to Support Capturing of Construction Field Data with Data Acquisition Technologies," Computing in Civil Engineering, ASCE International Conference on Computing in Civil Engineering, Clearwater Beach, FL, June 17-20, pp. 1-8. http://dx.doi.org/10.1061/9780784412343.0001

Jung, I-S., J. H. Garrett, Jr., L. Soibelman, and K. Lipkin. 2012. "Application of Classification Models and Spatial Clustering Analysis to a Sewage Collection System of a Mid-Sized City," Computing in Civil Engineering, ASCE International Conference on Computing in Civil Engineering, Clearwater Beach, FL, June 17-20, pp. 537-544. http://dx.doi.org/10.1061/9780784412343.0068

Gao, T., Ergan, S., Akinci, B., Garrett, J., and Soibelman, L. 2012. "Development of a Framework for Identifying Information Bottlenecks and Evaluating Different Data Capture Technologies to Support Proactive Productivity Management", Construction Research Congress, May 21-23, West Lafayette, IN, pp. 356-365. http://dx.doi.org/10.1061/9780784412329.036

Liu, C., Harley, J., O'Donoughue, N., Ying, Y., Altschul, M. H., Garrett Jr., J. H., Moura, J. M. F., Oppenheim, I. J., and Soibelman, L. "Ultrasonic Monitoring of a Pipe under Operating Conditions." 2012 SPIE Smart Structures/NDE Conference, San Diego, CA, March 11-15, 2012.

Akcamete, A., X. Liu, B. Akinci, J.H. Garrett, Jr., "Integrating and Visualizing Maintenance and Repair Work Orders in BIM: Lessons Learned from a Prototype," in CD Proceedings of CONVR2011, International Conference on Construction Applications of Virtual Reality, November 2011.

Ying, Y., Garrett Jr., J. H., Harley, J., Moura, J.M.F., O'Donoughue, N., Oppenheim, I. J., Shi, J., and, Soibelman, L. (2011). "Machine Learning for Pipeline Monitoring under Environmental and Operational Variations." Proc. of the 8th International Workshop on Structural Health Monitoring, Stanford, CA.

Ying, Y., J. H. Garrett Jr., J. Harley, I. J. Oppenheim, J. Shi, and L. Soibelman. "Damage Detection in Pipes under Changing Environmental Conditions using Embedded Piezoelectric Transducers and Pattern Recognition Techniques." Proceedings of 2011 International Conference on Pipelines and Trenchless Technology, Beijing, China, November 2011.

Harley, J., Ying, Y., Garrett Jr., J. H., Soibelman, L., Oppenheim, I. J., Moura, J.M.F. "Application of Mellin Transform Features for Robust Ultrasonic Guided Wave Structural Health Monitoring." 38t Review of Progress in Quantitative Nondestructive Evaluation, Burlington, VT, 2011.

Liu, X., B. Akinci, J. H. Garrett, Jr. and M. Bergés, "Requirements and Development of A Computerized Approach for Analyzing Functional Relationships Among HVAC Components Using Building Information Models," In Proceedings of the CIB W78 2011, 28th International Conference- Applications of IT in AEC industry, Sophia-Antipolis, France, October 26-28, 2011.

Taneja, S., B. Akinci, J.H. Garrett, Jr., E.W. East and L. Soibelman. 2011 "BIM-based Hybrid Inertial Positioning for Facility Operations Support ," In Proceedings of the CIB W78 2011, 28th International Conference- Applications of IT in AEC industry, Sophia-Antipolis, France, October 26-28, 2011.

Akcamete, A., B. Akinci, J.H. Garrett, Jr., "An Approach to Capture Facility Maintenance and Repair Information to Store Change History," In Proceedings of the CIB W78 2011, 28th International Conference- Applications of IT in AEC industry, Sophia-Antipolis, France, October 26-28, 2011.

Taneja, S., A. Akcamete, B. Akinci, J.H. Garrett, Jr., E.W. East and L. Soibelman. "COBIE-based Lightweight Representation of a Building Navigation Network," In Proceedings of the 28th International Symposium of Automation and Robotics in Construction (ISARC2011), Seoul, South Korea, June 29-July 2, 2011.

Taneja, S., B. Akinci, J.H. Garrett, Jr., E.W. East and L. Soibelman. "Transforming an IFC-based Building Layout Information into a Geometric Network Model for Indoor Navigation Assistance", ASCE Workshop on Computing in Civil Engineering, Miami, US, 19-22 June, 2011.

Liu, X., B. Akinci, J.H. Garrett, Jr., M. Berges, "Requirements for an Integrated Framework of Self-managing HVAC systems," ASCE Workshop on Computing in Civil Engineering, Miami, FL, 19-22 June, 2011.

Ying, Y., J.Harley, J. H. Garrett, Jr., Y. Jin, I. J. Oppenheim, J. Shi, and L. Soibelman ”Applications of Machine Learning in Pipeline Monitoring”, ASCE Workshop on Computing in Civil Engineering, Miami, US, 19-22 June, 2011.

Taneja, S., A. Akcamete, B. Akinci, J.H. Garrett, Jr., E.W. East and L. Soibelman, "Analysis of Three Indoor Localization Technologies to Support Facility Management Field Activities", International Conference on Computing in Civil and Building Engineering, W. Tizani (Editor), Nottingham, UK, University of Nottingham Press, Paper 49, pp. 97, 30 June-2 July, 2010. ISBN 978_1_907284_60_1.

Liu, X., Akinci, B., Garrett, J., and Akin O. (2010) "Requirements for a computerized approach to plan sensor placement in the HVAC systems" International Conference on Computing in Civil and Building Engineering, W. Tizani (Editor), Nottingham, UK, University of Nottingham Press, 30 June-2 July, 2010. ISBN 978_1_907284_60_1.

Akcamete, A., Akinci, B., Garrett, J. H., Jr. (2010) "Opportunities for Utilizing Building Information Models (BIMs) for Maintenance Management", "International Conference on Computing in Civil and Building Engineering, W. Tizani (Editor), Nottingham, UK, University of Nottingham Press, 30 June-2 July, 2010. ISBN 978_1_907284_60_1.

Demir, S., Garrett, Jr., J. H., Akinci, B., Akin, O., Palmer, M. E., (2010) "A Semantic Web-based Approach for Representing and Reasoning with Vocabulary for Standards Processing", International Conference on Computing in Civil and Building Engineering, W. Tizani (Editor), Nottingham, UK, University of Nottingham Press, 30 June-2 July, 2010. ISBN 978_1_907284_60_1.

Cerda, F., J. H. Garrett, Jr., J. Bielak, R. Bhagavatula & J. Kovačević, "Exploring Indirect Vehicle-Bridge Interaction for Bridge SHM.," pp. 696-702, IABMAS2010, 5th International Conference on Bridge Maintenance, Safety and Management, July 11-15, 2010

Taneja, S., B. Akinci, J.H. Garrett, Jr., E.W. East and L. Soibelman, "Evaluation of Localization Algorithms for WLAN-based Tracking to Support Facility Management Field Activities," Proceedings of CIB W-78 Applications of IT in the AEC Industry, Cairo, Egypt, 16-18 November 2010.

Akcamete, A., S. Taneja, B. Akinci, J.H. Garrett, Jr., L. Soibelman, E.W. East, "Comparison of Indoor Localization Technologies for Context-Aware BIM,² 2009 US Army Corps of Engineers Research and Development Conference, Science and Technology: The Corner Stone for Building Strong, Memphis, TN, November 17-19, 2009.

Akcamete, A., Akinci, B., Garrett, J. H., Jr. "Lessons Learned from Generation of BIM for Construction Management: Case Study", Fifth International Conference on Construction in the 21st Century (CITC-V) "Collaboration and Integration in Engineering, Management and Technology", Istanbul, Turkey, May 20-22, 2009.

D. E. Shaw, J. H. Garrett Jr, J. Bielak, F. Cerda, "A Holistic Approach to Structural Health Monitoring of Bridges", in the Proceedings of the International Bridge Conference, June 13-15, 2009, Pittsburgh, PA

Oliviera, D., L. Soibelman, J. H. Garrett, Jr., "Spatial Clustering Analysis of Water Main Break Events", in Proceedings of the 2009 International Workshop on Computing in Civil Engineering, Austin, TX, June 24-27, 2009.

Akcamete, B. Akinci, J. H. Garrett, Jr., "Motivation for Computational Support for Updating BIMs", in Proceedings of the 2009 International Workshop on Computing in Civil Engineering, Austin, TX, June 24-27, 2009.

Pradhan, A., B. Akinci, J. H. Garrett, Jr., "Development and Testing of Correction-based Inertial Measurement System for Indoor Localization", in Proceedings of the 2009 International Workshop on Computing in Civil Engineering, Austin, TX, June 24-27, 2009.

Leite, F., B. Akinci, J. H. Garrett, Jr., O. Akin, "Representation of Facility Contents and Threats for Supporting Identification of Vulnerabilities in Building Emergencies", in Proceedings of the 2009 International Workshop on Computing in Civil Engineering, Austin, TX, June 24-27, 2009.

Agrawal, A., J. Harley, Y. Ying, J.H. Garrett Jr., H. Sohn, L. Soibelman, "Preliminary studies on the dispersion of signals produced by permanently installed MFC transducers for pipeline monitoring", in Proceedings of the Workshop of the European Group of Intelligent Computing in Engineering (EG-ICE), July 14-16, 2009, Berlin, Germany.

Lee, K. J., O. Akin, B. Akinci, J. H. Garrett, Jr., S. Bushby, "Ontology Development for Low-Energy Building Embedded Commissioning, in Proceedings of International Conference for Evaluation of Building Operations (ICEBO '09), Nov. 17-18, 2009, Austin TX.

J. Harley, N. O'Donoughue, J. States, Y. Ying, J. H. Garrett, Jr., Y. Jin, J. M.F. Moura, I. Oppenheim, L. Soibelman, "Focusing of Ultrasonic Waves in Cylindrical Shells using Time Reversal" in the Proceedings of the 7th International Workshop on Structural Health Monitoring, Sept. 9-11, 2009, Stanford, CA.

Akcamete, A., B. Akinci, J. H. Garrett, Jr., "Opportunities for Utilizing Building Information Models (BIMS) for Maintenance Management," in Proceedings of 26th CIB W78 Conference on Construction IT, Istanbul, Turkey, October 1-3, 2009.

Guo, Wei, Lucio Soibelman and James H. Garrett, Jr. "Imagery Enhancement and Interpretation for Remote Visual Inspection of Aging Civil Infrastructure," ICCCBE-XII & INCITE 2008, October 16-18, 2008, Tsinghua University, Beijing.

Guo, W., Garrett Jr. J. H., Oliveira, D. P., Soibelman, L. (2008). "Integrating Traditional Inspection Data and New Technologies for Automated/Improved Condition Assessment for Sewer Maintenance", Intelligent Computing in Engineering 2008 Conference, July 2008. Plymouth, UK.

Akcamete, Asli, Burcu Akinci and James H. Garrett, Jr. "Towards a Formal Approach for Updating Building Information Models", In Proceedings of the 5th International Conference on Innovation in Architecture, Engineering and Construction, AEC2008, June 23-25 2008, in Antalya, Turkey

Oliviera, D., W. Guo, L. Soibelman, J. H. Garrett, Jr., " Spatial Data management and Analysis in Sewer Systems' Condition Assessment: An Overview", in Proceedings of the 2007 International Workshop on Computing in Civil Engineering, Eds., L. Soibelman and B. Akinci, pp. 391-398, Pittsburgh, PA, July 25-27, 2007.

Guo, W., L. Soibelman, J. H. Garrett, Jr., "Automatic Defect Detection and Recognition for Asset Condition Assessment: A Case Study on Sewer Pipeline Infrastructure System", in Proceedings of the 2007 International Workshop on Computing in Civil Engineering, Eds., L. Soibelman and B. Akinci, pp. 419-426, Pittsburgh, PA, July 25-27, 2007.

Shih, C.-Y., C. Scown, L. Soibelman, H. S. Matthews, J. H. Garrett, Jr., K. Dodrill, S. McSurdy, "Decision Support Framework for Electricity Production Vulnerability Assessment", in Proceedings of the 2007 International Workshop on Computing in Civil Engineering, Eds., L. Soibelman and B. Akinci, pp. 427-434, Pittsburgh, PA, July 25-27, 2007.

Dodrill, K., J. H. Garrett, S. Matthews, C. Y. Shih, L. Soibelman and S. McSurdy (2007). "Knowledge Management and Visualization in Support of Vulnerability Assessment of Electricity Production." Conference: Transporation Research Board 86th Annual Conference, January 21-25, 2007

Garrett, Jr., J. H., B. Akinci, S. Matthews, C. Gordon, H. Wang, V. Singhvi. "Sensor-driven proactive management of infrastructure systems," Proceedings of the 13th EG-ICE Workshop: Intelligent Computing in Engineering and Architecture, Ascona, Switzerland, June 25-30, 2006

Singhvi, Vipul, Mike Bigrigg, Scott Matthews, James H. Garrett, Jr., "Continuous Commissioning using Embedded Sensor Networks", ASCE Computing in Civil Engineering Conference, July 2005.

Garrett, James H., Jr. "Advanced Infrastructure Systems: Vision, Requirements, Research and Responsibilities", Invited Keynote Address, ASCE Computing in Civil Engineering Conference, July 2005.

Akin, M.T. Turkaslan-Bulbul & I. Gursel, J.H. Garrett Jr, B. Akinci, H. Wang. (2004) "Embedded Commissioning for Building Design", in: European Conference on Product and Process Modeling in the Building and Construction Industry, Istanbul, Turkey.

Wesner, J.W., Garrett, J.H., Subrahmanian, E., Westerberg, A.W. and Amon, C.H., "Carnegie Mellon's Multidisciplinary Engineering Design Projects Course Serves a Variety of Students and Project Sponsors," Proc. 2004 ASEE Annual Conference and Exposition, Salt Lake City, UT, 2004.

Bürgy, Christian; Garrett, James H., Jr: "Research and Industry: An Overview of Speech Interaction with Wearable Computers in Industrial Applications"; Proceedings of the 1st International Forum on Applied Wearable Computing (IFAWC 2004), Technologie-Zentrum Informatik, Universität Bremen; TZI-Bericht Nr. 30, 2004.

Turkaslan-Bulbul, MT. Akin, O. Garrett, Jr., J.H. Akinci, B. "Overview of Design Evaluation Towards a Comprehensive Computational Approach" in E-Activities in Design and Design Education, B. Tuncer, SS. Ozsariyildis and S. Sariyildiz, Editors, Eurapia Productions, Paris, France, 2003, pp. 203-209.

Akin, O., Turkaslan-Bulbul, T., Brown, S., Kim, E., Akinci, B., Garrett, J. "Comparison of ASHRAE Guidelines with Building Commissioning Practice." Proceedings of the 11th National Conference on Building Commissioning, Palm Springs California, May 19-22, 2003.

Reinhardt, J. B. Akinci, J. H. Garrett, Jr., "Using Customized Navigational Models to Deliver more Efficient Interaction with Mobile Computing Devices on Construction Sites," in Proceedings of ISARC2002, pp. 363-368, Washington, D.C., September 23-25, 2002.

Bürgy, C., J. H. Garrett, Jr., "Situation-aware Interface Design: An Interaction Constraints Model for Finding the Right Interaction for Mobile and Wearable Computer Systems," in Proceedings of ISARC2002, pp. 563-568, Washington, D.C., September 23-25, 2002.

Sunkpho, J., J. H. Garrett, Jr., S. McNeil, "A Framework for Field Inspection Support Systems Applied to Bridge Inspection," in Proceedings of the 7th International Conference on Applications of Advanced Technologies in Transportation, pp. 417-424, ASCE, Cambridge, MA, August 5-7, 2002.

Buchheit, R., J. H. Garrett, Jr., S. McNeil, M. H. Chalkline, "Automated Procedures for Improving the Accuracy of Sensor-Based Monitoring Data," in Proceedings of the 7th International Conference on Applications of Advanced Technologies in Transportation, pp. 402-409, ASCE, Cambridge, MA, August 5-7, 2002.

Buchheit, R., J. H. Garrett, Jr., S. McNeil, "A Constraint-Based Procedure for Improving the Accuracy of Sensor-Based Monitoring Data," in Proceedings of the IABSE Conference Towards a Better Built Environment -Innovation, Sustainability, Information Technology, Melbourne, Australia, September 11-13, 2002.

Hammad, A, J. H. Garrett, Jr., H. A. Karimi, "Potential of Mobile Augmented Reality for Infrastructure Field Tasks," in Proceedings of the 7th International Conference on Applications of Advanced Technologies in Transportation, pp. 425-432, ASCE, Cambridge, MA, August 5-7, 2002.

Akinci, B., J. H. Garrett, Jr., M. Patton, "A Vision for Active Project Control using Advanced Sensors and Integrated Project Models," Special Conference on Fully Integrated and Automated Project Processes in Civil Engineering, ASCE, pp. 386-397, Virginia Tech, Jan 23-25, 2002.

Bürgy, C., J. H. Garrett, Jr., M. Klausner, J. Anlauf, G. Nobis, "Speech-Controlled Wearable Computers for Automotive Shop Workers, Proceedings of SAE 2001 World Congress, SAE Technical Paper Series No. 2001-01-0606, March 5-8, 2001, Detroit, Michigan.

Sunkpho, J., J. H. Garrett, Jr., and A. Smailagic, "Opportunities for Speech Recognition for Bridge Inspection," in the Proceedings of the 2000 ASCE Construction Congress, pp. 184-193, Orlando, FL, Feb 20-22, 2000.

Papers in Symposium or Conference Proceedings

Jung, I., Berges, M., and Garrett, Jr., J.H. 2014. "Anomaly Detection on Piezometer Data Collected from Embankment Dams Using Physical Model-Based Simulation." International Conference on Computing in Civil and Building Engineering, Orlando, FL, June 23-25, pp. 1771-1778. http://dx.doi.org/10.1061/9780784413616.220

Anil, E., Akinci, B., Garrett, J., and Kurc, O. (2013) Representation of Damage Information for Post-Earthquake Damage Assessment of Reinforced Concrete Frames. Computing in Civil Engineering (2013): pp. 825-832. http://dx.doi.org/10.1061/9780784413029.103

Wang, Z., Chen, S., Lederman, G., Cerda, F., Bielak, J., Garrett, J., Rizzo, P., and Kovačević, J. 2013. "Comparison of Sparse Representation and Fourier Discriminant Methods: Damage Location Classification in Indirect Lab-scale Bridge Structural Health Monitoring." Structures Congress 2013: pp. 436-446. http://dx.doi.org/10.1061/9780784412848.039

Ong, L., VanBriesen, J., and Garrett, Jr., J. H. 2013. "Spatiotemporal Dimensions of Network Density-Based Clustering for Water Pipe Maintenance." ASCE International Workshop on Computing in Civil Engineering, Los Angeles, CA, June 23-25, pp. 17-24. http://dx.doi.org/10.1061/9780784413029.003

Gao, T., Ergan, S., Akinci, B., Garrett, Jr., J., and Soibelman, L. (2012). "Evaluation of Existing Sensor Ontologies to Support Capturing of Construction Field Data with Data Acquisition Technologies." International Conference on Computing in Civil Engineering, Clearwater Beach, FL, June 17-20, pp. 1-8. http://dx.doi.org/10.1061/9780784412343.0001

Gao, T., Ergan, S., Akinci, B., Garrett, Jr., J., and Soibelman, L. 2012. "Development of a Framework for Identifying Information Bottlenecks and Evaluating Different Data Capture Technologies to Support Proactive Productivity Management." Construction Research Congress, West Lafayette, IN, May 21-23, pp. 356-365. http://dx.doi.org/10.1061/9780784412329.036

Liu, X., Akinci, B., Bergés, M., and Garrett, Jr., J. (2012). "Exploration and Comparison of Approaches for Integrating Heterogeneous Information Sources to Support Performance Analysis of HVAC Systems." International Conference on Computing in Civil Engineering, Clearwater Beach, FL, June 17-20, pp. 25-32. http://dx.doi.org/10.1061/9780784412343.0004

Y. Ying, J. Harley, N. O'Donoughue, J. H. Garrett Jr., Y. Jin, J. M. F. Moura, I. J. Oppenheim and L. Soibelman, "Time Reversal for Damage Detection in Pipes", in Proceedings of 2010 SPIE Smart Structures/NDE Conference, Vol. 7647, San Diego, CA, March 7-11, 2010, pp.1-12.

Ying, Y., Oppenheim, I. J., Garrett Jr., J. H., Greve, D. W., and Soibelman, L., "Oblique Excitation of Nearly-Longitudinal Waves in Thick Plates", in Proceedings of 2010 SPIE Smart Structures/NDE Conference, Vol. 7647, San Diego, CA, March 7-11, 2010, pp. 76474L.1-11.

Ying, Y., Soibelman, L., Harley, J., O'Donoughue, N., Garrett Jr., J. H., Jin, Y., Moura, J. M. F., and Oppenheim, I. J., "A Data Mining Framework for Pipeline Monitoring Using Time Reversal", Proceedings of 2010 Society for Industrial and Applied Mathematics (SIAM) Conference on Data Mining -Workshop on Data Mining for Smarter Infrastructure, Columbus, OH, May 2010. (Invited paper)

Jin., Y., O'Donoughue, N., Moura, J. M. F., Harley, J., Garrett Jr., J. H., Oppenheim, I. J., Soibelman, L., and Ying, Y., "Cognitive sensor network for structure defect monitoring and classification using guided wave signals", Proceedings of 2010 SPIE Smart Structures/NDE Conference, Vol. 7647, San Diego, CA, March 7-11, 2010, pp. 76473T.1-12.

Soibelman, L, and Garrett, J. H., "Sensor Data-Driven Management of Infrastructure Systems", Information Technology in Architecture, Engineering, and Construction Workshop", September 6-7, 2007, Cork, Ireland.

Tang, Pingbo, Burcu Akinci and James H. Garrett, Jr., "Laser Scanning for Bridge Inspection and Management In Proceedings of IABSE Symposium 2007, Weimar, Germany, pp 206 – 207, Sept 19-21, 2007

Wang, H., B. Akinci, J. H. Garrett, Jr. "A Semi-Automated Schema Matching Approach using Detected Version Differences", in the Proceedings of the Joint International Conference on Computing and Decision Making in Civil and Building Engineering, Montreal, Canada, June 14-16, 2006.

Shih, C.Y.., S. L. Hung, , J. H. Garrett, Jr. , L. Soibelman, and J. S. Dai "Steel Bridge Corrosion Detection by Wavelet Transform Theory", in the Proceedings of the Joint International Conference on Computing and Decision Making in Civil and Building Engineering, Montreal, Canada, June 14-16, 2006.

Singhvi, V., J. H. Garrett, Jr., H. S. Matthews, C. Guestrin, K. P. Lam "Utility-based Decision Making in Building Infrastructure", in the Proceedings of the Joint International Conference on Computing and Decision Making in Civil and Building Engineering, Montreal, Canada, June 14-16, 2006.

Chettupuzha, A. J. A., B. Farooq, C. Y. Shih, J. L. Wright, S. Lee, S. Kiziltas, J. H. Garrett, Jr., H. Karimi and A. Smailagic. 2006. "Augmented Reality Interfaces for Bridge Inspection Training", Joint International Conference on Computing and Decision Making in Civil and Building Engineering, Montreal, Canada, June 14-16, pp. 1477-1486.

Matthews, H. S., J. H. Garrett, Jr., M. W. Bigrigg. "Information and Communication Technology for Intelligent, Sustainable Infrastructure Systems," in the CD Proceedings of the International Association of Bridge and Structural Engineers (IABSE) Symposium: Responding to Tomorrow's Challenges in Structural Engineering, IABSE, Budapest, Hungary, September 13-15, 2006.

Guo, W., L. Soibelman, J. H. Garrett, Jr. "Automatic Visual Data Interpretation for Pipeline Infrastructure Assessment," in the CD Proceedings of the International Association of Bridge and Structural Engineers (IABSE) Symposium: Responding to Tomorrow's Challenges in Structural Engineering, IABSE, Budapest, Hungary, September 13-15, 2006.

Wang, H., B. Akinci, J. H. Garrett, Jr. and K. Reed. "Feasibility and Fidelity of Data Exchange Through IFC For Building Commissioning," International Conferences on Enhanced Building Operations (ICEBO), Carnegie Mellon University, Pittsburgh, PA, Oct.11-13, 2005.

Bürgy, Christian and Garrett, James H., Jr.: "Using Business Process Modeling for the Integration of Wearable Computer Systems in MRO Applications"; proceedings of IEEE Mechatronics & Robotics 2004; Aachen, Germany 2004; pp. 1578-1583

Reinhardt, J. B. Akinci, J. H. Garrett, Jr., "A System for Efficient Interaction with Product and Process Models on Construction Sites," in CD Proceedings of the IABSE Symposium, Shanghai China, September 2004.

Reinhardt, J. J. H. Garrett, Jr., and B. Akinci, "SiDaCoS: Product and Process Models on Construction Sites," in Proceedings of the Xth Conference on Computing in Civil and Building Engineering, Bauhaus University Weimar, Weimar, Germany, June 2-4, 2004.

Gordon, C. J., B. Akinci, J. H. Garrett, Jr., "An Approach for Planning Sensor-Based Inspection of the Built Environment," in Proceedings of the Xth Conference on Computing in Civil and Building Engineering, Bauhaus University Weimar, Weimar, Germany, June 2-4, 2004.

Wang, H., B. Akinci, J. H. Garrett, Jr., O. Akin, T. Turkaslan-Bulbul , I. Gursel, "Towards Domain-Oriented Semi-Automated Model Matching for Supporting Data Exchange," in Proceedings of the Xth Conference on Computing in Civil and Building Engineering, Bauhaus University Weimar, Weimar, Germany, June 2-4, 2004.

Bürgy, C., and J. H. Garrett, Jr., "Supporting Domain Experts in Determining Viable User Interface Designs for Wearable Computers Used in AEC Work Situations," in Proceedings of the Xth Conference on Computing in Civil and Building Engineering, Bauhaus University Weimar, Weimar, Germany, June 2-4, 2004.

Hammad, A., J. H. Garrett, Jr., Karimi, H. A. "Mobile Infrastructure Management Support System Considering Location and Task Awareness" in the Proceedings of the Fourth Joint International Symposium on Information Technology in Civil Engineering: Towards a Vision for Information Technology in Civil Engineering (on CD), ASCE, 2003.

Garrett, Jr., J. H. "From IT-Supported Offices to IT-Supported On-Site Activity: Vision, Issues, Initial Directions," in the Proceedings of the Fourth Joint International Symposium on Information Technology in Civil Engineering: Towards a Vision for Information Technology in Civil Engineering (on CD), ASCE, 2003.

Gordon, C., B. Akinci, J. H. Garrett, Jr. "The Need for Value Analysis and Planning for Effective Quality Control Technology Decision-Making" in Proceedings of the Fourth Joint International Symposium on Information Technology in Civil Engineering: Towards a Vision for Information Technology in Civil Engineering (on CD), ASCE, 2003.

Anderson, J. L., J. H. Garrett, Jr., P. Laughlin, R. P. Kail, "The Curriculum Assessment Process in the College of Engineering at Carnegie Mellon University", in the Proceedings of the 2002 ABET Outcomes Assessment Conference, November 1, 2002, Pittsburgh, PA.

Garrett, Jr., J. H., C. Bürgy, J. Reinhardt, J. Sunkpho, "An Overview of the Research in Mobile/Wearable Computer-Aided Engineering Systems in the Advanced Infrastructure Systems Lab at Carnegie Mellon University", in the CD Proceedings of the Bauen mit Computern (Computer-Aided Construction) Conference, Bonn, Germany, April 11-12, 2002.

Bürgy, Christian and James H. Garrett, Jr. 2002. Wearable Computers: An Interface between Humans and Smart Infrastructure Systems. In the CD Proceedings of the Bauen mit Computern 2002, Bonn, Germany. VDI Verlag GmbH, Düsseldorf, Germany, April 11-12, 2002.

Yun, H, M. E. Patton, J. H. Garrett, Jr., G. K. Fedder, K. M. Frederick, J-J Hsu, I. J. Lowe, I. J. Oppenheim, P. Sides, "Developments in chlorine detection in concrete using NMR," in the Proceedings of the SPIE Smart Structures and Materials Conference, March 2002.

Subrahmanian, E., A. Westerberg, S. Talukdar, J. Garrett, A. Jacobson, C. Paredis, C. Amon, P. Herder, A. Turk, "Integrating Social Aspects and Group Work Aspects in Engineering Design Education," in the Proceedings of the Mudd Design Workshop III - Social Dimensions of Engineering Design, Harvey Mudd College, pp 117-124, May 17-19, 2001.

Bürgy, Christian, Jan Reinhardt, and James H. Garrett, Jr. Wearable Computer: Der Entwurf mobiler IT-Systeme zur Unterstützung von Arbeitsprozessen im Bauwesen. Fortschritt-Berichte VDI - Junge Wissenschaftler forschen, Reihe 4, Nr. 169, Forum Bauinformatik 2001, (München). VDI Verlag GmbH, Düsseldorf, 2001.

Januschkowetz, Antje; Hendrickson, Chris T., Garrett, James H. Jr., "Models for Combining Enterprise Resource Planning Systems and Life Cycle Assessment Software," EcoBalance 2000-The Fourth International Conference on EcoBalance. October 31- November 2, 2000. Epochal Tsubuka, Tsubuka, Japan. 2000.

Sackin, D. M., J. H. Garrett, Jr., K. J. Gabriel, and M. E. Patton, "Embedded Microdevices for Infrastructure Monitoring," in the Proceedings of the Annual Congress of the International Association of Bridge and Structural Engineers, on CD, September, 2000.

R. B. Buchheit, J. H. Garrett, Jr., S. R. Lee, and R. Brahme, "A Knowledge Discovery Case Study for the Intelligent Workplace," in the Proceedings of the 8th International Conference on Computing in Civil and Building Engineering, pp. 914-921, Stanford, CA, Aug. 14-16, 2000.

Sunkpho, J, J. H. Garrett, Jr. and A. Smailagic, "Towards a Framework for Developing Audio-Centric Interfaces for Field Data Collectiona Applications," in the Proceedings of the 8th International Conference on Computing in Civil and Building Engineering, pp. 1029-1036, Stanford, CA, Aug. 14-16, 2000.

Garrett, Jr., J. H. and J. Sunkpho, "Issues in Delivering Mobile IT Systems to Field Users," in the Proceedings of IKM 2000, on CD, Weimar, Germany, June, 2000. (a keynote address)

Reinhardt, J., J. H. Garrett, Jr., R. J. Scherer, "The Preliminary Design of a Wearable Computer for Supporting Construction Progress Monitoring," in the Proceedings of IKM 2000, on CD, Weimar, Germany, June, 2000.

Sackin, D. M., J. H. Garrett, Jr., K. J. Gabriel, and M. E. Patton, "MEMS for Civil Infrastructure: Smart Aggregate for Concrete," Proceedings of the ASCE Structures Congress, on CD, May 2000.

Oppenheim, I. J., J. H. Garrett, Jr., and K. J. Gabriel, "Civil Engineering Applications of MEMS," in the Proceedings of the ASCE Space 2000 Conference, Albuquerque, NM, Feb 28-Mar 2, 2000.

Sections or Chapters in Edited Monographs or Similar Volumes

X. Liu, B. Akinci, M. Berges, and J. H. Garrett (2014) "Domain-Specific Querying Formalisms for Retrieving Information About HVAC Systems," Special Issue on Computational Approaches to Understand and Reduce Energy Consumption in the Built Environment, Journal of Computing in Civil Engineering. http://dx.doi.org/10.1061/(ASCE)CP.1943-5487.0000359

Dzombak, D.A., VanBriesen, J.M., Garrett, J.H., Soibelman, L. (2010) "Sensing for improved water infrastructure management in 2050," in Water Resources 2050 Vision, Walter Grayman, Peter Loucks, and Laurel Saito, Editors, American Society of Civil Engineering, Environmental and Water Resources Institute, Reston, VA.

Kiliccote, Han and James H. Garrett, Jr. (2005) Agents for Standards Processing, Chapter 10 in Agents and Multi-Agent Systems in Construction, C.J. Anumba, O.O. Ugwu and R. Zen, eds., Taylor & Francis Group, London and New York, pp. 249-271.

Hammad, A., Garrett, J.H., and Karimi, H.A. (2004), "Location-Based Computing for Infrastructure Field Tasks, Chapter 10 in Telegeoinformatics: Location-Based Computing and Services, Karimi, H.A.and Hammad, A. (Editors). Taylor & Francis, pp. 287-314.