Kincho H. Law

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Research Interests

Prof. Law's professional and research interests focus on the application of computational and information science in engineering. His work has dealt with various aspects of computational mechanics and structural dynamics, AI and machine learning, large scale database management, Internet and cloud computing, numerical methods and high performance computing. His research application areas include computer aided engineering, legal and engineering informatics, engineering enterprise integration, web services and supply chain management, monitoring and control of engineering systems, smart infrastructures, and smart manufacturing.

Education

Doctor of Philosophy, Civil Engineering, Carnegie-Mellon University, Pittsburgh, PA, 1981
Master of Science, Civil Engineering, Carnegie-Mellon University, Pittsburgh, PA, 1979
Bachelor of Science, Civil Engineering (with High Honors), University of Hawaii, Honolulu, HI, 1976
Bachelor of Arts, Mathematics (with Distinction), University of Hawaii, Honolulu, HI, 1976

Academic Appointments

1997-Present   Professor, Department of Civil and Environmental Engineering, Stanford University, Stanford, California.
1991-1997   Associate Professor, Department of Civil Engineering, Stanford University, Stanford, California.
1988-1991   Assistant Professor, Department of Civil Engineering, Stanford University, Stanford, California.
1982-1988   Assistant Professor, Department of Civil Engineering, Rensselaer Polytechnic Institute, Troy, New York.

Faculty Affiliation (Stanford University)

Center for Integrated Facility Engineering (CIFE), Stanford University
John A. Blume Earthquake Engineering Center, Stanford University
MediaX, Stanford University
SystemX, Stanford University
Urban Studies Program, Stanford University
Center for Computational Social Science, Stanford University

Faculty Affiliation (External)

Distinguished Visiting Professor, Tsinghua University, Beijing, China, 2019-2022

Visiting (Research) Professor, Dept. of Real Estate and Construction, Faculty of Architecture, University of Hong Kong, Hong Kong, 2018-2021

External Examiner, Department of Civil Engineering, University of Hong Kong, Hong Kong, September, 2016 – August, 2020

Invited (Visiting) Professor, Beijing Jiaotong University, Beijing, China 2013-2017

Chair Visiting Professor, Tsinghua University, Beijing, China, 2013-2018

Invited Guest Faculty, Ecole Polytechnique Federale De Lausanne (EPFL), July, 2003

Academic/Industrial Advisory Board

Member, International Scientific Committee, TUM Georg Nemetschek Institute (GNI) Artificial Intelligence for the Built World, Technical University of Munich, March, 2023 – February, 2026.

Member of Advisory Committee, GREAT Smart Cities Institute (GSCI), Hong Kong University of Science and Technology, Hong Kong, April, 2022 – March, 2024

Member of Academic Advisory Committee, School of Engineering, Hong Kong University of Science and Technology, Hong Kong, July, 2017 – June, 2020

Strategic Advisor, Civionics Inc., Ann Arbor, Michigan -- Sensor-Driven Predictive Analytics for Engineered Systems (2011-2018)

Advisor, Locus Energy Inc. (A Genscape Company), New Jersey -- Monitoring and Analytics for Solar Industry (2012-2018)

Advisor, Infinite Uptime Inc., Berkeley, California -- Industrial Internet Platform for Predictive Analytics (2016-2022)

External Senior Advisor, Guangxi Bridge Monitoring & Reinforcement Engineering Technical Research Center, Guangxi Transportation Research Institute, Nanning, Guangxi (2016-2019)

Advisor, PlusAI, Cupertino, California – Autonomous Vehicles (2016-Present)

Selected Professional Affiliations

American Society of Civil Engineers
American Society of Mechanical Engineers
Institute of Electrical and Electronic Engineers
California Universities for Research in Earthquake Engineering
Digital Government Society of North America

Editorial Board

Journal of Computing in Civil Engineering, ASCE, Specialty Editor, Structural and Infrastructure Informatics

ASTM Journal on Smart and Sustainable Manufacturing Systems, Member of the Editorial Board

IT Professional, IEEE Computer Society, Regular Papers Editor, Member of the Editorial Board

Journal of Engineering with Computers, Member of the Editorial Board

Journal on Advances in Engineering Software, Member of the Editorial Advisory Board

International e-Journal on IT in Construction (ITCON), Member of Editorial Board

Journal of Computing in Civil Engineering, ASCE, Associate Editor (former)

Journal of Computing Information and Science in Engineering, ASME, Associate Editor (former)

Selected Awards and Honors

Excellence in Research Award, Division of Computers and Information in Engineering, American Society of Mechanical Engineers, 2023

Senior Member, Institute of Electrical and Electronics Engineers, elected 2019

Distinguished (Visiting) Professor, Tsinghua University, Beijing, China, 2019-2022

Life Member, American Society of Civil Engineers, elected 2018

Visiting (Research) Professor, Dept. of Real Estate and Construction, Faculty of Architecture, University of Hong Kong, Hong Kong, 2018-2021

John L. Tishman Lecture, Construction Engineering and Management, Department of Civil and Environmental Engineering, University of Michigan, April, 2018

Distinguished Member, American Society of Civil Engineers, elected 2017

Fellow, American Society of Mechanical Engineers, elected 2017

Best Paper Award, IEEE Big Data 2016, Symposium on Data Analytics for Advanced Manufacturing, Washington, D.C., December 7, 2016.

Best Paper award, 2015 Manufacturing Science and Engineering Conference (MSEC 2015), ASME Manufacturing Engineering Division, Charlotte, NC, June 8-12, 2015.

Chair (Visiting) Professor, Tsinghua University, Beijing, China, 2015-2018

Invited (Visiting) Professor, Beijing Jiaotong University, Beijing, China 2013-2017

Chair (Visiting) Professor, Tsinghua University, Beijing, China, 2013-2015

Best Paper Award, ASCE Journal of Computing in Civil Engineering, 2014

Best Research Paper award in the Area of Resilience and Smart Structures, 2013 ASCE International Workshop on Computing in Civil Engineering, June 2013.

Best Research and Practice Paper Award, 6th International Conference on Electronic Governance (ICEGOV), Albany, New York, October, 2012.

Computing in Civil Engineering Award, American Society of Civil Engineers, 2011

Meritorious Paper Award on the Foundations of Electronic Governance, 4th International Conference on Electronic Governance (ICEGOV), Beijing, China, October, 2010.

Distinguished Lecturer, Department of Civil and Environmental Engineering, University of Michigan, Engineering the Impossible Distinguished Lecture Series, November 2009.

Best Research Paper Award, 9th Annual International Conference on Digital Government Research (dg.o2008), May 2008

Distinguished Lecturer, Department of Civil, Architecture and Environmental Engineering, University of Texas at Austin, March 2008

Best Paper Award, Journal of Computing in Civil Engineering, ASCE, 1999

Faculty Member of the Year Award, Society of Chicano/Latino Engineers and Scientists, Stanford University, 1996

Outstanding Research Advisor, Society of Chicano/Latino Engineers and Scientists, Stanford University, 1993

Sigma Xi, The Scientific Research Society of North America

The Honor Society of Phi Kappa Phi

Chi Epsilon, a National Honorary Civil Engineering Society

Harold Thomas Scholarship Award, Civil Engineering Department, Carnegie-Mellon University, 1978

Dai Ho Chun Scholarship Award, University of Hawaii, 1976

Selected Synergistic Activities

Participated in workshops sponsored by government agencies and research organizations including NSF, NEES, PEER, EPA, Access Board, NIST, FIATECH, Kennedy School of Government, Science and Technology Policy Institute/IDA and others.

Invited speaker at various organizations and universities including Computers and Structures, Inc., Sun Hung Kai Properties Ltd., Glodon, ANSYS, Inc., Strathclyde University, EPFL, Loughborough University, Kansai University, University of Tokyo, Osaka University, Kyoto University, University of Hong Kong, Hong Kong University of Science and Technology, Hong Kong Polytechnic University, Savantas Policy Institute (Hong Kong), Korea Advanced Institute of Science and Technology, Seoul National University, Xiamen University, Shanghai Jiaotong University, Tongji University, Tsinghua University, Beijing Jiaotong University, Harbin Institute of Technology,

Guangxi Academy of Transportation science, Carnegie Mellon University, University of Michigan, UC San Diego, University of Texas at Austin, Georgia Institute of Technology and others

Active participant and member of professional organizations, including American Society of Civil Engineers (Member, Past Chair and Control Group Member on AI, Database, Education Committees in the Technical Council on Computer Practices/Technical Council on Information and Computing Technology; Member and Past Chair of Committees in the Structural Engineering Institute; Host and Organizer for many ASCE Conferences and Technical Sessions), American Society of Mechanical Engineers (Member, Past Chair of Engineering Data Management Symposium), Activities with IAI (Code and Standards Committee), Society of Industrial and Applied Mathematics, Association of Computing Machinery, Digital Government Society

Selected Invited Lectures/Presentations
2022
Information Science and Computing Technologies for Civil Infrastructural Engineering
(Remote) Invited Plenary Presentation, 3rd International Conference on Civil Engineering Fundamentals and Applications (ICCEFA'22), October 26, 2022

2021
Data Science for Civil Infrastructure Monitoring
(Remote) Invited Seminar, Data Science Institute, University of Hawai`i, Mānoa, April 16, 2021

From Digital Technologies to Smart Infrastructures and Resilient Cities
(Remote) 1st International Symposium: Envisioning Smart Cities and Beyond, Stanford Center at Incheon Global Campus (SCIGC), Songdo, Korea of Republic, June 4, 2021.

Smart Urban Infrastructures and Smart Cities – A Research Perspective
(Virtual Presentation) Keynote Presentation, 26th International Symposium on Advancement of Construction Management and Real Estate (CRIOCM 2021), Tsinghua University, Beijing, China, November 20, 2021

2020
Information Science and Computing Technologies in Civil and Building Engineering
(Remote) Keynote Presentation, 25th International Symposium on Advancement of Construction Management and Real Estate (CRIOCM 2020), November 28, 2020.

Opportunities and Applications of Information and Communication Technologies (ICT) in Civil and Building Engineering
(Remote) Keynote Presentation, 8th International Conference on Innovative Production and Construction (IPC 2020), Hong Kong, December 7, 2020

2019
Computing and AI (Machine Learning) in Civil and Construction Engineering
Public Lecture, Department of Civil Engineering, University of Hong Kong, May 30, 2019.

ICT in Design, Construction and Management in Architecture, Engineering, Construction and Operations (AECO)
Conference Keynote Presentation, 36th CIB W78 Conference, Northumbria University at Newcastle, United Kingdom, September 20, 2019

A Software Platform for Civil Infrastructure Health Monitoring
Keynote Presentation, 2nd International Conference on Sustainable Buildings and Structures (ICSBS), Xi'an Jiaotong-Liverpool University, Suzhou, China, October 26, 2019

Information Infrastructure for Civil Infrastructure Monitoring
Invited Lecture, Department of Civil Engineering, Tsinghua University, Beijing, China, October 28, 2019

Information and Communication Technologies (ICT) in Civil and Building Engineering
Conference Keynote Presentation, 4th International Conference on Civil and Building Engineering Informatics (ICCBEI), Sendai, Miyagi, Japan, November 7, 2019

A Scalable and Interoperable CyberInfrastructure Platform for Civil Infrastructure Monitoring
Invited Seminar, OKI Electric Industry Co., Ltd., Tokyo, Japan, November 11, 2019

2018
A Machine Learning Approach to System Characterization and Control Optimization – with Application to Wind Farm Power Production
Public Lecture, Faculty of Construction and Environment, Hong Kong Polytechnic University, January 22, 2018.

Computing in Civil and Construction Engineering
John L. Tishman Distinguished Lecture in Construction Engineering and Management, Department of Civil and Environmental Engineering, University of Michigan, Ann Arbor, Michigan, April 11, 2018.

Data Driven (Machine Learning) Approach to System Characterization, Diagnostics and Control Optimization
Keynote Presentation, 25th Workshop for Intelligent Computing in Engineering, Lausanne, Switzerland, June 10th-13th, 2018

Applications of AI in Engineering
Invited Lecture, Kobori Research Complex, Kajima Corporation, Tokyo, Japan, July 26th, 2018

Applications of AI and Machine Learning in Engineering
Invited Lecture, Department of Real Estates and Construction, Faculty of Architecture. University of Hong Kong, September 19, 2018

Applications of AI and Machine Learning in Engineering
Blume/SURI Affiliate/Alumni Meeting, Stanford University, October 5, 2018

Optimization of Wind Farm Layout for Maximizing Wind Farm Power Production
Workshop on High Performance Wind Energy System and Effective Operations of Wind Farms (HPWES), Chongqing, China, October 18-19, 2018

When Infrastructure Becomes Sensitive
Hemi Annual Summit: 2019 Top 10 Emerging Technologies & Wine Pairing, Palace Hotel, San Francisco, December 7 2018

2017

Applications of Data Driven (Machine Learning) Approach to System Characterization, Diagnostics and Control Optimization
Invited Seminar, Department of Civil and Environmental Engineering, Georgia Institute of Technology, March 27, 2017.

Smart Cities
Seminar Discussion, ATLAS (Argentina) Smart Cities Delegation, Office of International Affairs, Stanford University, May 3, 2017.

Smart Cities
Invited Presentation, Smart City Symposium 2017, Hong Kong, June 8, 2017.

Information Modeling and Computational Infrastructure for Civil Infrastructure Monitoring
Keynote Presentation, Symposium on BIM and GIS: New Opportunities and Challenges for Civil Engineers, ASCE (HK) and Construction Industry Council, Hong Kong, June 9, 2017.

Applications of Data Driven (Machine Learning) Approach to System Diagnostics and Control Optimization
Invited Seminar, Department of Civil and Environmental Engineering, Hong Kong University of Science and Technology, August 29, 2017.

Information Management and Data-Driven Analytics for Structural Monitoring
Invited Seminar, Gaungxi Transportation Research and Consulting Co., Ltd., Gaungxi, China, September 7, 2017.

Applications of Data Driven (Machine Learning) Approach to System Diagnostics and Control Optimization
Invited Seminar, College of Civil Engineering and Architecture, Guangxi University, September 8, 2017.

Cyberinfrastructure Framework for Smart Civil Infrastructure Monitoring
Invited Seminar, Korea ICT Bridge Seminar, Korea Infrastructure Safety & Technology Corporation (KISTEC), Seoul, Korea, September 1, 2017.

Data Driven (Machine Learning) Approach for Wind Farm Power Maximization
Invited Presentation, International High-End Forum on Structural Engineering and Wind Engineering, Chongqing, China, October 14, 2017.

Smart Manufacturing and Related Technologies
Workshop on Innovation Driven Sustainable Enterprise Development, CSGDC, Stanford University, October 11, 2017.

ICT in Civil and Construction Engineering
Invited Presentation, China Communications Construction Group, Stanford University, December 5, 2017.

2016
An Ontology-Based Approach for Facilitating Information Retrieval from Disparate Sources: Patent System as an Exemplar
Invited Presentation, Ontology Summit (Webinar), March 10, 2016.

ICT for Civil Infrastructures

Invited Seminar, Hazard Analytics Meeting, International Computer Science Institute (ICSI), Berkeley, CA, June 1, 2016.

Data Driven Control Optimization with Machine Learning – Wind Farm Power Maximization as an Exemplar
Invited Seminar, Seoul National University, Korea, June 28, 2016.

Smart Cities or Smart Communities
Invited Presentation, Urban Resilience Workshop, Tsinghua Institute for Future Cities and Infrastructures (IFCI), Tsinghua University, Beijing, China, July 2, 2016.

Using Ontologies for Information Retrieval and Interoperability
Invited Seminar, Tsinghua University, Beijing, China, July 5, 2016.

Smart Manufacturing and Related Technologies
Invited Seminar, Workshop on Innovation Driven Sustainable Enterprise Development, Center for Sustainable Development and Global Competitiveness, Stanford University, Stanford, CA, September 19, 2016.

Data Driven Predictive Analytics for Manufacturing Machine Tools
Invited Seminar, National Institute of Standards and Technology, October 31, 2016.

A Data-Driven Control Optimization Approach for Wind Farm Power Maximization using Machine Learning
Invited Seminar, Beijing Jiaotong University, December 21, 2016.

Applications of Computing and AI in Engineering
Invited Conference Keynote Presentation, International Conference on Construction Applications of Virtual Reality**,** Hong Kong, December 12, 2016.

A Cyber Infrastructure Framework for Bridge Monitoring
Invited Seminar, Gaungxi Transportation Research Institute, Gaungxi, China, December 19, 2016.

2015
Computational Service Infrastructure for Structural Health Monitoring
Invited Keynote, Conference on Sensors and Smart Structures Technologies for Civil, Mechanical, and Aerospace Systems, SPIE Smart Structures NDE, March 9, 2015.

Computational Service Infrastructure for Structural Health Monitoring
Invited Seminar, Korea Advanced Institute of Science and Technology (KAIST), Korea, March 25, 2015.

Wireless Sensing, Monitoring and Control of Civil Structures
Invited Seminar, Chonbuk University, Korea, March 26, 2015.

Smart Cities,
Seminar Series on Sustainable Urbanization, Department of Civil and Environmental Engineering, Stanford University, May 29, 2015.

Data Driven Control Optimization with Machine Learning – Wind Farm Power Maximization as an Exemplar

Invited Seminar, Tsinghua University, Beijing, China, September 14, 2015.

Sensing Technologies and Information Infrastructure for Bridge Monitoring
Invited Seminar, Gaungxi Transportation Research Institute, Gaungxi, China, September 16, 2015.

Data Analytics for Smart Manufacturing Systems
Keynote Presentation, IEEE International Conference on Big Data, Santa Clara, CA, October 29, 2015.

A Data-Driven Control Optimization Approach Using Machine Learning – with Applications to Wind Farm Power Maximization
Invited Public Lecture, Faculty of Construction and Environment, Hong Kong Polytechnic University, Hong Kong, China, December 11, 2015.

Smart Cities or Smart Communities
Invited Seminar, Savantas Policy Institute, Hong Kong, China, December 11, 2015.

A Data-Driven Control Optimization Approach Using Machine Learning – with Applications to Wind Farm Power Maximization
Invited Lecture, International Symposium on Data-Driven Structural Control and Management, Disaster Prevention Research Institute (DPRI), Kyoto University, Kyoto, Japan, December 17, 2015.

2014
Engineering and Social Science (Research and Opportunities)
Invited Presentation, Global Innovation Leadership Program, MediaX, Stanford University, February 19, 2014.

Overview of Machine Learning (with Applications to Engineering)
Symposium for Smart Manufacturing System Design and Analysis, National Institute of Standards and Technology, March 17-19, 2014.

A Patent System Ontology for Facilitating Retrieval of Patent-Related Information
Invited Presentation, Workshop on Computation, Mathematics and the Law, School of Law, University of San Diego, March 21-22, 2014.

REGNET: Regulation Information Management, Compliance and Analysis
Invited Presentation, Workshop on Computation, Mathematics and the Law, School of Law, University of San Diego, March 21-22, 2014.

A Patent System Ontology for Facilitating Retrieval of Patent-Related Information
Invited Presentation, Patent Information Users Group (PIUG) Annual Conference, Los Angeles, CA, April 28-30, 2014.

Smart Manufacturing – Needs for Standards and Support Mechanisms
National Institute of Standards and Technology, June 17, 2014.

Internet-Enabled Model-Based CAD
Invited Presentation, Glodon Company, Beijing, China, July 22, 2014.

Internet Computing in Civil and Building Engineering
Invited Presentation, Tsinghua University, Beijing, China, July 18, 2014.

Power Maximization of Wind Farm – A Machine Learning Approach
2nd Workshop for Innovation on Mitigating Wind-Induced Disaster of Infrastructures Sensitive to Wind, Beijing Jiaotong University, September 13, 2014.

Information and Computing Technologies in Civil Engineering
Beijing Jiaotong University, September 17, 2014.

Power Maximization of Wind Farm – A Machine Learning Approach
Hong Kong University of Science and Technology, December 9, 2014.

2013
An Overview on Practice and Research in Bridge Monitoring Technologies
Invited Seminar Presentation, Guangxi Academy of Transportation Science, Guangxi, China, March 29, 2013.

Wireless Sensing, Monitoring and Control of Civil Structures
Invited Lecture, Beijing Jiaotong University, Beijing, China, April 26, 2013.

Wind-Induced Vibration Energy Harvester
Invited Presentation, Workshop on Innovation and Intelligence to Wind Engineering, Beijing Jiaotong University, Beijing, China, April 28, 2013.

Applications of Computing and Communication Technologies in Civil and Building Engineering
Invited Lecture, Department of Civil Engineering, Harbin Institute of Technology, Harbin, China, July 5, 2013.

A Machine Learning Approach for Wind Turbine Monitoring – Wind Field Characterization and Load Predictive Analysis
Invited Presentation, International Symposium on Innovation and Sustainability of Structures in Civil Engineering, Harbin, China, July 6, 2013.

Computing and Communication Technologies in Civil and Building Engineering
Invited Lecture, Department of Civil Engineering, Tsinghua University, Beijing, China, July 9, 2013.

Computing and Communication Technologies in Civil and Building Engineering
Invited Seminar, Department of Civil and Environmental Engineering, Hong Kong Polytechnic University, Hong Kong, December 6, 2013.

A Bayesian Optimization Approach for Wind Farm Monitoring and Power Maximization
Invited Presentation, 6th International conference on Structural Health Monitoring of Intelligent Structures, Hong Kong, December 9, 2013

2012
Application of Computing and Communication Technologies in Civil and Building Engineering
Invited Seminar Presentation, Department of Civil and Environmental Engineering, Hong Kong University of Science and Technology, Hong Kong, December 10, 2012.

Towards Life-Cycle Management of Wind Turbines based on Structural Health Monitoring
Invited Speaker, First International Conference on Performance-based and Life-cycle Structural Engineering, Hong Kong, December 6, 2012.

Characterization of Sustainable Product Assembly and Manufacturing
Invited Presentation, Engineering Laboratory, National Institute of Standards and Technology, Gaithersburg, MD,, November 13, 2012.

2011
Using Ontologies for Information Retrieval and Interoperability
Invited Seminar Presentation, Information Technology Laboratory, National Institute of Standards and Technology, Gaithersburg, MD,, May 27, 2011

Monitoring and Control of Civil Structures
Invited Seminar Presentation, Guangxi Academy of Transportation Science, Guangxi, China, July 22, 2011

Computing and Communication Technologies in Civil and Building Engineering
Invited Seminar Presentation, School of Economics and Management, Tongji University, Shanghai, China, July 28, 2011

REGNET: Regulation Information Management, Compliance and Analysis
Invited Presentation, IEEE International Symposium on Technology and Society, Xavier University, Chicago, IL, May 22, 2011

Web Services in Civil and Structural Engineering Simulations
Invited Keynote Presentation, International Symposium on Innovation & Sustainability of Structures in Civil Engineering, Xiamen University, Xiamen, China, October 29, 2011

2010
Information and Communication Technologies in Civil Engineering
Invited Seminar, Department of Civil Engineering, The University of Hong Kong, March 19, 2010.

Emerging Applications of Computing, Information and Communication Technologies in Architectural and Civil Engineering
Invited Keynote Presentation, 10th International Conference on Construction Applications of Virtual Reality, Sendai, Miyagi, Japan, November 4-5, 2010.

3D Model-Based Civil and Architectural Engineering Design Using Cloud Computing
Invited Presentation, JACIC-JSCE Seminar on State of the Art Virtual Reality Application in Europe and the United States – Application of 3D Data, Building Information Modeling (BIM), and Cloud Computing, Tokyo, Japan, November 8, 2010.

Wireless Sensing, Monitoring and Control of Civil Structures
Invited Seminar, Department of Civil Engineering, School of Naval Architecture, Ocean, and Civil Engineering, Shanghai Jiao Tong University, December 9, 2010, Shanghai, China.

Emerging Applications of Information and Communication Technologies in Engineering
Invited Keynote Speaker, 2010 International Conference on Progress in Informatics and Computing (PIC 2010), December 10-12, 2010, Shanghai, China.

2009
REGNET: Regulation Management and Compliance Assistance

Invited Presentation, Global Electronic Government Research and Practice, Hawaii International Conference on System Sciences, Hawaii, January 5, 2009.

From 3D CAD to Enterprise Computing
Invited Presentation, Kansai University Tokyo Center, Tokyo, Japan, February 12, 2009.

Network Computing in Civil and Building Engineering
Invited Seminar, Computer Aided Engineering Program, National Taiwan University, Taipei, Taiwan, February 17, 2009.

Adapting Open Standards for Engineering Supply Chain
Invited Panel Presentation, CIE 5-2 Open Standards for Model-Based Enterprise and Engineering Integration, ASME Computer and Information Engineering Conference, San Diego, CA, August 31, 2009

Adapting Open Standards for Sustainable Engineering Supply Chain
Invited Presentation, Workshop on Sustainable Manufacturing Metrics, Standards and Infrastructure, National Institute of Standards and Technology, Gaithersburg, MD, October 14, 2009

Computing and Communication Technologies in Civil and Building Engineering
Engineering the Impossible Distinguished Lecture Series, Department of Civil and Environmental Engineering, University of Michigan, November 9, 2009.

2008
Conference Summary and Future Directions
Special Guest Lecture, 12th International Conference on Computing in Civil and Building Engineering (ICCCBE XI) and 2008 International Conference on Information Technology in Construction (INCITE 2008), Beijing, China, October 15-17, 2008.

Applications of Computing, Information and Communication Technologies in Civil and Building Engineering
Invited Seminar, Department of Building and Real Estate, Hong Kong Polytechnic University, Hong Kong, China, October 14, 2008.

Applications of Computing, Information and Communication Technologies in Civil and Building Engineering
Invited Seminar, Division of Sustainable Energy and Environmental Engineering, Graduate School of Engineering, Osaka University, Japan, June 27, 2008.

Applications of ICT to Civil Engineering Informatics
Invited Seminar, Kansai University, Osaka, Japan, June 26, 2008.

Wireless Sensing for Structural Monitoring and Control
Invited Seminar, Structural Engineering Seminar Series, Department of Civil, Architecture and Environmental Engineering, The University of Texas at Austin, March 5, 2008.

Emerging Applications of Computing, Information and Communication Technologies in AEC
Distinguished Lecture Series, Department of Civil, Architecture and Environmental Engineering, The University of Texas at Austin, March 4, 2008.

2007

Applications of Information and Communication Technologies in AEC– (Web Services and Human Centered Computing)
Invited Seminar, Korea Advanced Institute of Science and Technology, Dajeon, Korea, September 17, 2007

Wireless Sensing Technologies for Civil Infrastructure Monitoring and Management
Invited Keynote Speaker, 5th International Symposium for Safety of Infrastructure, U-Safety for Infrastructure, Seoul, Korea, sponsored by Korea Infrastructure Safety and Technology Corporation, September 14, 2007

Wireless Sensing and Control – with Applications to Civil Structures
Invited Seminar, University of Tokyo, Tokyo, Japan, August 31, 2007

Engineering Applications of Information and Communication Technologies – (Web Services, Wireless Sensing and Human Centered Computing)
Invited Keynote Speaker, Symposium on CALS-EC - 3DCAD and GIS 2007, Kansai University Tokyo Center, Tokyo, Japan, August 30, 2007

A Reference Data Model and Data Retrieval Tools for NEES Experimentations
Invited Keynote Speaker, KOCED International Symposium on Data Modeling, Korea Construction Engineering Development Collaboratory Program Management Center, Seoul National University, Seoul, Korea , August 23, 2007

Wireless Sensing Technologies for Structural Monitoring and Control
Invited Lecture, Sun Hung Kai Properties, Ltd., Hong Kong, China, July 6, 2007

Wireless Sensing, Monitoring and Control -- with Applications to Civil Structures
Nanqian Lecture, Xiamen University, Xiamen, China, July 4, 2007

Ontology Mapping by Corpus-Based Semantic Similarity
Invited Presentation, Workshop on E2ESU (End-to-End Service Utilities), National Institute of Standards and Technology, March 22-23, 2007

2006
Wireless Sensing, Actuation and Control – With Applications to Civil Structures
Invited Seminar, Hong Kong University of Science and Technology, Hong Kong, China, November 20, 2006

Conference Summary and Future Directions
Special Guest Lecture, World Conference on IT in Design and Construction, ITCITE/ITCSED, New Delhi, India, November 15-17, 2006

Wireless Sensing, Actuation and Control – With Applications to Civil Structures
Invited Seminar, Nanyang Technological University, Singapore, November 14, 2006

Distributed Engineering Web Services
Invited Seminar, National University of Singapore, Singapore, November 13, 2006

Wireless Sensing, Actuation and Control – With Applications to Civil Structures
Invited Keynote Presentation, 13th European Group – Intelligent Computing in Engineering Workshop, Monte Verita, Ascona, Switzerland, June 25-30, 2006

An Internet-Enabled Software Framework for Finite Element Structural Analysis
Invited Seminar, University of Michigan, Ann Arbor, Michigan, March 30, 2006

Applications of ICT Standards in Engineering
Invited Keynote Presentation, Open ICT Ecosystems, National Institute of Standards and Technology, Gaithersburg, MD, March 13-14, 2006

2005
Distributed Engineering Services
Invited Keynote Presentation, ASCE Conference on Computing in Civil Engineering, Cancun, Mexico, July 14, 2005

NEESgrid – A CyberInfrastructure for Earthquake Engineering Simulation (NEESgrid Data/MetaData Efforts and Issues)
Invited Seminar, National Center for Research on Earthquake Engineering, National Taiwan University, Taipei, Taiwan, June 16, 2005

NEESgrid – A CyberInfrastructure for Earthquake Engineering Simulation (NEESgrid Data/MetaData Efforts and Issues)
Invited Seminar, Hyogo Earthquake Engineering Research Center, Miki City, Japan, May 20, 2005

Distributed Engineering (Web) Services – with Applications to Civil and Construction Engineering
Invited Keynote Presentation, 2nd International Symposium on Life-Cycle Science and Engineering, Kansai University, Osaka, Japan, May 19, 2005

NEESgrid – A CyberInfrastructure for Earthquake Engineering Simulation (NEESgrid Data/MetaData Efforts and Issues)
Invited Presentation, NSF Exchanging CyberInfrastructure Themes in Engineering Design (EXCITE) Workshop, Washington, DC, February 28, 2005

2004
Internet-Enabled Distributed Engineering (Web) Services
Invited Keynote Presentation, International Workshop on Integrated Life-Cycle Management of Infrastructures, Hong Kong University of Science and Technology, Hong Kong, December 10, 2004

An Internet-Enabled Software Framework for Finite Element Structural Analysis
Invited Seminar, Department of Civil Engineering, Korea Advanced Institute of Science and Technology (KAIST), Korea, December 7, 2004

Wireless Sensing and Monitoring of Civil Infrastructures
Invited Seminar, Department of Civil Engineering, Hong Kong University of Science and Technology, Hong Kong, August 26, 2004

Software Composition and Engineering Web Services
Invited Seminar, Department of Computer Science, Shanghai Jiaotong University, Shanghai, China, August 23, 2004

Data Issues for NEESgrid – A Virtual Collaborative CyberInfrastructure

Invited Presentation, NSF Collaborative Large-scale Engineering Analysis Network for Environmental Research (CLEANER) Workshop, Albany, New York, June 15, 2004

Data Issues for (Engineering) CyberInfrastructure
Invited Presentation, NSF ITR/ENG/CI Meeting, Arlington, VA, June 11, 2004

A Sparse Direct Solver
Invited Seminar, Computers and Structures, Inc., Berkeley, CA, June 7, 2004

2003
Compliance Analysis and Simulation of Wheelchair Accessibility
Invited Presentation, Workshop on Space Requirements for Wheeled Mobility, State University of New York (SUNY), Buffalo, New York, October 10, 2003

Gaussian Elimination – Numerical Method is not only Numeric
Invited Lecture, Applied Computing and Mechanics Laboratory (IMAC). Ecole Polytechnique Federale De Lausanne (EPFL), Lausanne, Switzerland, July 25, 2003

Integration and Coordination of Distributed Engineering Services
Invited Seminar, Applied Computing and Mechanics Laboratory (IMAC). Ecole Polytechnique Federale De Lausanne (EPFL), Lausanne, Switzerland, July 23, 2003

Application of Data Structures and Algorithms
Invited Lecture, Applied Computing and Mechanics Laboratory (IMAC). Ecole Polytechnique Federale De Lausanne (EPFL), Lausanne, Switzerland, July 18, 2003

Vibration Based Monitoring and Damage Assessment of Civil Structures
Invited Seminar, Applied Computing and Mechanics Laboratory (IMAC). Ecole Polytechnique Federale De Lausanne (EPFL), Lausanne, Switzerland, July 16, 2003

Distributed Computing and Communication Technologies for AEC
Invited Keynote Presentation, 2nd International Conference on Innovation in Architecture, Engineering and Construction (AEC), Loughborough University, United Kingdom, June 26, 2003

Compliance Assistance Tools and E-Rulemaking
Invited Panel Presentation, New Directions for Information Technology and Government Regulation, Digital Government Conference, Boston, MA, May 20, 2003

An Internet-Enabled Software Framework for Finite Element Structural Analysis
Invited Seminar, Department of Structural Engineering, University of California, San Diego, February 19, 2003

IT Support for E-Rulemaking
Invited Presentation, NSF Workshop on E-Rulemaking,. organized by the Regulatory Policy Program, Kennedy School of Government, Harvard University, January 18, 2003

2002
REGNET: An Infrastructure for Regulatory Information Management and Compliance
Invited Presentation, National Compliance Assistance Providers Forum, Environmental Protection Agency, San Antonio, TX, December 6, 2002.

Computational Infrastructure for Composing Distributed Engineering Services
Invited Seminar, Manufacturing Systems Integration Division, National Institute of Standards and Technology (NIST), November 4, 2002

Vibration Based Structural Monitoring and Damage Assessment
Invited Seminar, Department of Civil Engineering, Seoul National University, August 26, 2002

Performance-Based Engineering (vs. Standards Based Design)
Invited Presentation, Workshop on Performance-Based Regulation. Organized by the Regulatory Policy Program, Kennedy School of Government, Harvard University, Washington, D.C., May 13, 2002

Vibration-Based Structural Monitoring and Damage Assessment
Civil Infrastructures Systems Seminar, Department of Civil and Environmental Engineering, Carnegie Mellon University, March 28, 2002

Performance-Based Disabled Access Analysis
Invited Seminar, Access Board, Washington, D.C., March 27, 2002

REGNET: Information Infrastructure for Regulation Management and Compliance Assistance
Invited Presentation, National Science Foundation, March 26, 2002

Publications
2023

V.W.H. Wong and K.H. Law, "Fusion of CCTV Video and Spatial Information for Automated Crowd Congestion Monitoring in Public Urban Spaces," Algorithms, 16:154 (21 pages), 2023.
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(Current or Most Recently Known Coordinate: Unknown)

Seongwoon Jeong
Ph.D. Thesis Title: A Scalable and Interoperable Cyberinfrastructure Platform for Civil Infrastructure Monitoring
Department of Civil and Environmental Engineering
Date of completion: March, 2019
(Current or Most Recently Known Coordinate: VMware/Uhana)

Maria Frank (Co-Advisor)
Ph.D. Thesis Title: Uncovering Hidden Demands of Global Learners - Mind and Body in a PBL Context
Department of Civil and Environmental Engineering
(Principal Co-Advisor: Dr. Renate Fruchter)
Date of completion: March, 2017
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Jinkyoo Park
Ph.D. Thesis Title: Data-Driven Cooperative Control for Wind Farm Power Maximization
Department of Civil and Environmental Engineering
Date of completion: March, 2016
(Current or Most Recently Known Coordinate: Korea Advanced Institute of Science and Technology)

Kevin Wong (Co-Advisor)
Ph.D. Thesis Title: Detection of Atypical Patterns of Occupancy and Mobility in Smart Homes and Offices with a Network of Motion Detectors
Department of Electrical Engineering
(Principal Co-Advisor: Hamid Aghajan)
Date of completion: August, 2015
(Current or Most Recently Known Coordinate: Unknown)

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Ph.D. Thesis Title: A Computational Framework Incorporating Human and Social Behaviors for Occupant-Centric Egress Simulation
Department of Civil and Environmental Engineering
Date of completion: January 2015
(Current or Most Recently Known Coordinate: Apple Computer, Inc.)

Amanda (Amy) Askin
Ph.D. Thesis Title: An Advanced Strategy for Energy Efficient Lighting Incorporating Distributed Sensing and Tailored Controls
Department of Civil and Environmental Engineering
Date of completion: October 2011
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Chin-Ping (Jack) Cheng
Ph.D. Thesis Title: SC Collaborator: A Service Oriented Framework for Construction Supply Chain Collaboration and Monitoring
Department of Civil and Environmental Engineering (Minor: Management Science and Engineering)
Date of completion: December, 2009
(Current or Most Recently Known Coordinate: Hong Kong University of Science and Technology)

Yang Wang
Ph.D. Thesis Title: Wireless Sensing and Decentralized Control for Civil Structures: Theory and Implementation
Department of Civil and Environmental Engineering
Date of completion: September, 2007
(Current or Most Recently Known Coordinate: Georgia Institute of Technology)

Xiaoshan Pan
Ph.D. Thesis Title: Computational Modeling of Human and Social Behaviors for Emergency Egress Analysis
Department of Civil and Environmental Engineering
Date of completion: June, 2006
(Current or Most Recently Known Coordinate: CDM Tech.)

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Ph.D. Thesis Title: A Comparative Analysis Framework for Semi-Structured Documents, with Applications to Government Regulations
Department of Civil and Environmental Engineering (Minor: Computer Science)
Date of completion: August, 2004
(Current or Most Recently Known Coordinate: Alpha Medical)

Jinxing Cheng
Ph.D. Thesis Title: A Simulation Access Language and Framework with Applications to Project Management
Department of Civil and Environmental Engineering (Minor: Computer Science)
Date of completion: August, 2004
(Current or Most Recently Known Coordinate: Suning R&D Center, USA.)

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Ph.D. Thesis Title: A Software Infrastructure for Regulatory Information Management and Compliance Assistance
Department of Civil and Environmental Engineering (Minor: Computer Science)
Date of completion: August, 2003
(Current or Most Recently Known Coordinate: PlusAI, Inc.)

David Liu

Ph.D. Thesis Title: A Distributed Data Flow Model for Composing Software Services
(Co-advisor, Principal Advisor: Professor Gio Wiederhold)
Department of Electrical Engineering
Date of completion: June, 2003
(Current or Most Recently Known Coordinate: PlusAI, Inc.)

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Ph.D. Thesis Title: Distributed Information Organization and Management for Hazardous Waste Regulation Compliance Checking
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Department of Civil and Environmental Engineering
Date of completion: March, 2003
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Ph.D. Thesis Title: An Internet-Enabled Software Framework for the Collaborative Development of a Structural Analysis Program
Department of Civil and Environmental Engineering (Minor: Computer Science)
Date of completion: December, 2002
(Current or Most Recently Known Coordinate: PonyAI, Inc.)

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Ph.D. Thesis Title: Decentralization of Wireless Monitoring and Control Technologies for Smart Civil Structures
Department of Civil and Environmental Engineering
Date of completion: July, 2002
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Ph.D. Thesis Title: Subspace Approximation Methods for Perturbed Quadratic Eigenvalue Problems
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Ph.D. Thesis Title: Computer Models and Methods for a Disabled Access Analysis Design Environment
Department of Civil and Environmental Engineering
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(Current or Most Recently Known Coordinate: Aditazz, Inc..)

Hoon Sohn
Ph.D. Thesis Title: A Bayesian Probabilistic Approach to Damage Detection for Civil Structures
Department of Civil and Environmental Engineering
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(Current or Most Recently Known Coordinate: Korea Advanced Institute of Science and Technology)

Eduardo De Santiago
Ph.D. Thesis Title: A Distributed Implementation of The Finite Element Method for Coupled Fluid Structure Problems
Department of Civil Engineering

Date of Completion: December, 1996.
(Current or Most Recently Known Coordinate: Primera Engineers Ltd., Chicago)

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Ph.D. Thesis Title: A Data Management Model for Change Control in Collaborative Design
Environments
Department of Civil Engineering
Date of Completion: February, 1996.
(Current or Most Recently Known Coordinate: Candela IoT Corp)

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Ph.D. Thesis Title: Parallel and Stabilized Finite Element Methods for the Hydrodynamic Transport
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Date of Completion: June, 1995
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Ph.D. Thesis Title: Mesh Generation and Information Model for Device Simulation
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(Current or Most Recently Known Coordinate: Apache Design, Inc..)

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Ph.D. Thesis Title: Conjugate Gradient Method for Linear and Nonlinear Structural Analysis on
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Department of Civil Engineering
Date of Completion: February, 1994
(Current or Most Recently Known Coordinate: Bandung Institute of Technology, Indonesia)

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Ph.D. Thesis Title: Computer Assisted Conceptual Structural Design of Steel Buildings
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Date of Completion: November, 1992
(Current or Most Recently Known Coordinate: Takasago R&D Center, Mitsubishi Heavy Industries, Ltd.,
Japan)

David R. Mackay
Ph.D. Thesis Title: Solution Methods for Static and Dynamic Structural Analysis on Distributed Memory
Computers.
Department of Civil Engineering.
Date of Completion: August, 1992.
(Current or Most Recently Known Coordinate: ParaTools, Inc.)

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Ph.D. Thesis Title: An Integrated Framework for Design Standards Processing.
Department of Civil Engineering
Date of Completion: June, 1992
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Ph.D. Thesis Title: Reasoning and Representation for Integrated Structural Design of High Rise Commercial Office Buildings.
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Date of Completion: June, 1991.
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Ph.D. Thesis Title: Logic Based Approach to Structural Engineering Design
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