David T. Ma

GOV. MSG. NO. 838

Education

Mechanical Engineering, University of California, Santa Barbara, 2003.

Electrical and Computer Engineering, University of California, Santa Barbara, 2003.

Mechanical Engineering, University of Science and Technology, Beijing, 1999.

Naval Architecture, Shanghai Jiao Tong University, 1991.

Employment

Associate Dean, College of Engineering, University of Hawaii at Mānoa, 2017 – present

Professor, Department of Civil & Environmental Engineering, University of Hawaii at Mānoa, 2015 – present

Associate Professor, Department of Civil & Environmental Engineering, University of Hawaii at Mānoa, 2010 – 2015

Assistant Professor, Department of Civil & Environmental Engineering, University of Hawaii at Mānoa, 2005 – 2010

Postdoctoral Research Associate, Department of Mechanical & Environmental Engineering, University of California, Santa Barbara, 2003 – 2005

Research Assistant, Department of Mechanical & Environmental Engineering, University of California, Santa Barbara, 1999 – 2003

Head of Design Group, Erzhong Heavy Machinery Corporation, Sichuan, China, 1996 – 1999

Structural Engineer, Erzhong Heavy Machinery Corporation, Sichuan, China, 1991 – 1996

Research

Research Grants

Secured the following major grants at UH since 2008 totaling approximately $20 M:

1. P.I., Harvesting Kinetic Energy from Ambient Vibrations of Civil Infrastructural Systems Using Nonlinear Oscillators, NSF, $229,995, 2008 – 2012
2. P.I., Structural health monitoring and reliability analysis of highway bridges using smart sensor technologies, HDOT, $324,982, 2008 – 2012
3. P.I., IBRD: Structural health monitoring of Kahoma Stream Bridge, FHWA, $350,000, 2010 – 2015
4. P.I., Structural health monitoring of Kolekole Bridge, FHWA, HDOT, $323,000, 2013-2016
5. P.I., Structural health monitoring of Wiau Interchange: Quantification of Condition Assessment of Highway Bridges Via Data Fusion, HDOT, $256,000, 2015-2018
6. P.I., Structural health monitoring of Umauma Bridge: Long-term Monitoring Ultrahigh Performance Concrete in Bridge Joints, HDOT, $356,000, 2016-2019

7. Co-P.I., Statewide highways shoreline protection program study update, HDOT, $835,000, 2017-2019
8. Co-P.I., DUI Tracking System Development and Information Extraction, HDOT $161,280, 2018 - 2019
9. Co-P.I., Safety data infrastruction establishment and educational outreach activity on RITI communities (University Transportation Center), Univ. of Alaska, Fairbanks, USDOT, $2,100,000, 2018 - 2024
10. Co-P.I., Technology Transfer & Technical Assistance with Evaluating Carboncure Technologies, $200,000, 2019 - 2020
11. Co-P.I., Assessment of County of Maui Coastal Roads for Effects of Climate Change, Sea Level Rise and Shoreline Erosion, $700,000, 2019 - 2021
12. P.I., Technology Transfer & Technical Assistance with with Developing a New Website & Database System, $225,000, 2019 - 2021
13. P.I., V2X Enabled Interconnected Traffic Control System Innovations on the Nimitz Highway and Ala Moana Boulevard Arterial, FHWA/HDOT $6,388,659, 2019 - 2023
14. P.I., Technology Transfer & Technical Assistance with Technical Writing, FHWA/HDOT, $850,000, 2019 - 2023
15. Co-P.I, Applying Artificial Intelligence-Based Signal Coordination and Controls for Optimized Mobility for the Nimitz Highway and Ala Moana Boulevard Arterial in Honolulu, UT-Battelle, LLC, $ 300,000, 2021-2023
16. Co-P.I., Digital Mapping Data, Distance-Precision and Transportation Taxation Research, FHWA/HDOT, $ 500,000, 2022 - 2024
17. Co-P.I. Field Application of Cement-free Geopolymer Concrete Using Fly Ash, HDOT, $499,476, 2022-2025

Innovation Disclosures and Patents

T. Ma, J. Yu, E. Ma, "Apparatus and method for harvesting ambient energy by circuit reconfiguration"(US Patent No. 10873276, 2020)

T. Ma, J. Yu, and E. Ma, "Ambient energy harvesting device with charge-carrying movable electrode"(US Patent No. 10848079, 2020)

T. Ma, J. Yu, "Generating electricity from salinity gradient with electrodes of asymmetric pore distributions"(Patent pending)

T. Ma, J. Yu, "An automatic switching sytem for reconfiguration of circuits involving capacitors"(Patent pending)

Journal Publications

1. Yu, H., Li, Z., Zhang, G., Liu, P., and Ma, T.(2021) "Fusion convolutional neural network-based interpretation of unobserved heterogeneous factors in driver injury severity outcomes in single-vehicle crashes." *Analytic Methods in Accident Research*, **30**, 100 - 157
2. Guo, Y., Yu, H., Zhang, G., and Ma, T. (2021) "Exploring the impacts of travel-implied policy factors on COVID-19 spread within communities based on multi-source data interpretations." *Health and Place*, **69**, 102538 - 102550
3. Yu, J. and Ma, T. (2021) "Harvesting blue energy with carbon electrodes of asymmetric nanopore distributions." *Nano Energy*, **75**, 105766

4. Yu, H., Yuan, R., Li, Z., Zhang, G., and Ma, T. (2020) "Identifying heterogeneous factors for driver injury severity variations in snow-related rural single-vehicle crashes ." *Accident Analysis and Prevention*, **144**, 105587

5. Yu, J. and Ma, T. (2020) "Triboelectricity-based self-charging droplet capacitor for harvesting low-level ambient energy. " *Nano Energy* **74**, 104795.

6. Zhang, Q., Yu, H., Li, Z., Zhang, G., and Ma, D. T. (2020) "Assessing potential likelihood and impacts of landslides on transportation network vulnerability. " *Transportation Research Part D: Transport and Environment* **82**, 10234.

7. Li, Z., Chen, Yu, H., Chen, X., Zhang, G., and Ma, T. (2019) "Tsunami-induced traffic evacuation strategy optimization. " *Transportation Research Part D: Transport and Environment* **77**, 535–559.

8. Li, Z., Ci, Y., Chen, C., Zhang, G., Wu, Q., Qian, Z. S., Prevedouros, P.D., and Ma, T. (2019) "Investigation of driver injury severities in rural single-vehicle crashes under rain conditions using mixed logit and latent class models. " *Accident Analysis and Prevention* **124**, 219–229.

9. Li, Z., Chen, C., Wu, Q., Zhang, G., Liu, C., Prevedouros, P. D., Ma, T. (2018) "Exploring driver injury severity patterns and causes in low visibility related single-vehicle crashes using a finite mixture random parameters model" *Analytic Methods in Accident Research* **20**, December 2018, 1–14

10. Zhang, H., Corr, L. and Ma, T. (2018) "Effects of electrical loads containing non-resistive components on piezoelectric energy harvesting " *Mechanical systems and Signal Processing* **111**, 210–221

11. Yu, J., Ma, E. and Ma. T. (2018) "Exponential energy harvesting through repetitive reconfigurations of a system of capacitors " *Communications Physics* 1:9, DOI: 10.1038/s42005-018-0010-y

12. Zhang, H., Corr, L. and Ma, T. (2018) "Issues in vibration energy harvesting" *Journal of Sound and Vibration* 421, 79–90

13. Zhang, H., Corr, L. and Ma, T. (2018) "Effects of electrical loads containing non-resistive components on electromagnetic vibration energy harvester performance" *Mechanical Systems and Signal Processing* 101, 55–66

14. Yu, J., Ma, E. and Ma. T. (2017) "Harvesting energy from low-frequency excitations through alternate contacts between water and two dielectric materials" *Scientific Reports* 7, 17145

15. Corr, L. and Ma, T. (2016) "An estimate of spherical impactor energy transfer for mechanical frequency up-conversion energy harvester", *AIP Advances,* 6, 085019

16. Zhang, H. and Ma, T. (2015) "Roles of the Excitation in Harvesting Energy from Vibrations" *PLoS ONE*, 10(10): e0141299. doi:10.1371/journal.pone.0141299Vibrations"

17. Zhang, H. and Ma, T. (2015) "Period-one rotating solutions of horizontally excited pendulum based on Iterative Harmonic Balance", *Advances in Pure Mathematics*, 5, 413-427. DOI: 10.4236/apm.2015.58041.

18. Ma, T., Bell, M. S., Lu, W. and Xu, N. S. (2014) "Recovering Structural Displacements and Velocities from Acceleration Measurements", *Smart Structures and Systems,* 14(2), 191-207, DOI: http://dx.doi.org/10.12989/sss.2014.14.2.191

19. Ma, T. and Zhang, H. (2014) "Reaping the full potential of nonlinear energy harvesting with tunable damping and modulation of the forcing functions", *Applied Physics Letters,* 104, 214104, DOI: 10.1063/1.4879846

20. Zhang, H. and Ma, T. (2012) "Iterative Harmonic Balance for Period-One Rotating Solution of Parametric Pendulum", *Nonlinear Dynamics,* 70, 2433-2444, DOI: 10.1007/ s11071-012-0631-8

21. Ma, T. and Zhang, H. (2012) "Enhancing Mechanical Energy Harvesting with Dynamics Escaped from Potential Well", *Applied Physics Letters* 100(11), 114107

22. Ma, T., Xu, N. S. and Zhang, H. (2012). "A novel parametrically excited nonlinear energy harvester", *Mechanical Systems and Signal Processing*, 28(4), 323–332, DOI:10.1016/j.ymssp.2012.01.017

23. Ma, T. (2011). "Opportunities of Using Nonlinear Oscillators to Enhance Energy Harvesting from Impulsively Loaded Structures", *Journal of Systems and Control Engineering* 225(4), 467–474 DOI: 10.1177/2041304110394563

24. Sebastijanovic, N., Yang, H. T.Y. and Ma, T. (2010). "Detection of Changes in Global Structural Stiffness Coefficients Using Acceleration Feedback", *Journal of Engineering Mechanics*, ASCE, 136 (9), 1187-1191

25. Ma, T., Johansen, J., Xu, N., and Yang, H. T. Y. (2010). "Improved Decentralized Method for Control of Building Structures under Seismic Excitation", *Journal of Engineering Mechanics, ASCE* 136 (5) 662–673

26. Ma, T. (2010). "Almost Sure Stability Condition of Weakly Coupled Two-DOF Linear Nonautonomous Random Systems" *Applied Mathematics and Mechanics* 31 (8) 1–6

27. Labou, M. and Ma, T. (2009). "Lyapunov Exponents of Parametrically Coupled Linear Two-DOF Stochastic Systems and Related Stability Problems", *Journal of Sound and Vibration* 325, 421–435

28. Iu, C. K., Chen, W. F., Chen, S. L., and Ma, T. (2008). "Direct Second-order Elastic Analysis for Steel Frame Design", *KSCE Journal of Civil Engineering* 12(6), 379–389

29. Ma, T., Xu, N. S, and Tang, Y. (2008). "Decentralized Robust Control of Building Structures Under Seismic Excitations", *Earthquake Engineering and Structural Dynamics* 37 (1), 121–140.

30. Sebastijanovic, N., Ma, T. and Yang, H. T. Y. (2007). "Finite Element Study of Panel Flutter Detection and Control", *AIAA Journal* 45(1), 118–127

31. Ma, T. and Yang, H. T. Y., (2006). "Sampled-data Adaptive Structural Control with Time Delays", *Journal of Structural Engineering, ASCE* 132(7), 1129–1138

32. Ma, T., Yang, H. T. Y. and Chang, C. C, (2005). "Structural Component Damage Diagnosis under Seismic Excitations", *Journal of Engineering Mechanics, ASCE* 131(10), 1036–1045

33. Wrobleski, M. S., Ma, T. and Yang, H. T. Y., (2004). "Modeling of Structural Accelerations and Application to Controller Design" *Journal of Earthquake Engineering* 8 (6), 947–961

34. Ma, T. and Yang, H. T. Y., (2004). "Adaptive Feedback-Feedforward Control of Building Structures", *Journal of Engineering Mechanics, ASCE* 130 (7), 786–793.

Other Publications

1. Yang, H., Zou, R, Zhang, G., and Ma, T. (2022) "A Network Traffic Flow Dependency and Dynamics Based Traffic State Evolution Prediction Approach Using Connected Vehicles Data." *ASCE International Conference on Transportation and Development.* ASCE Transportation and Development Institute, (T & DI). May 30-June 3. 2022. Seattle, WA.

2. Shanglian Zhou, Guohui Zhang, and Tianwei Ma. (2022) "Connected and Autonomous Vehicle Trajectories Optimization on a Signalized Intersection Considering Traffic Flow Variation." *ASCE International Conference on Transportation and Development.* ASCE Transportation and Development Institute, (T & DI). May 30-June 3. 2022. Seattle, WA.

3. Hanyi Yang, Rong Zou, Guohui Zhang, and Tianwei Ma. (2022) "Coordination of Variable Speed Limit Control to Optimize Fuel Consumption and Traffic Efficiency for Freeway Corridor System. *ASCE International Conference on Transportation and Development.* ASCE Transportation and Development Institute, (T & DI). May 30-June 3. 2022. Seattle, WA.

4. Hanyi Yang, Guohui Zhang, and Tianwei Ma. (2022) "Deep Learning-based Vehicle Detection from Roadside LiDAR Data Under Adverse Weather Conditions." *ASCE International Conference on Transportation and Development.* ASCE Transportation and Development Institute, (T & DI). May 30-June 3. 2022. Seattle, WA.

5. Hanyi Yang, Guohui Zhang, and Tianwei Ma. (2022) "Identifying Factors for Traffic Accident Probabilities Considering Temporal-spatial Heterogeneity and Behavioral Effects." *ASCE International Conference on Transportation and Development.* ASCE Transportation and Development Institute, (T & DI). May 30-June 3. 2022. Seattle, WA.

6. Runze Yuan, Ningshou Xu, Hao Yu, Guohui Zhang, Tianwei Ma. (2022) "Internal Model Kalman Filter-based Hybrid Optimal Feedforward/ Feedback Control Strategy for Traffic Platoon Control Coordination Enabled by Partially Automated Vehicles." *Transportation Research Board Annual Conference*, Jan. 7-13, 2022. Washington D.C.

7. Mohan Putluru, Qian Zhang, Guohui Zhang, Tianwei Ma, Yunpeng Zhang. (2022) "A Semi-supervised Machine Learning-based Cyber Attack Detection Framework for Intelligent Transportation Systems (ITS) Data." *Transportation Research Board Annual Conference*, Jan. 7-13, 2022. Washington D.C.

8. Shanglian Zhou, Hao Xu, Guohui Zhang, Tianwei Ma, Yin Yang. (2022) "Transferring Machine Learning Approach to Harmonize LiDAR Data Heterogeneity for Seamless Vehicle Sensing and Tracking." *Transportation Research Board Annual Conference*, Jan. 7-13, 2022. Washington D.C.

9. Hanyi Yang, Lili Du, Guohui Zhang, Tianwei Ma. (2022) "A Traffic Speed Evolution Prediction Approach Based on A Deep Learning Model Considering Network Topology Knowledge." *Transportation Research Board Annual Conference*, Jan. 7-13, 2022. Washington D.C.

10. Arun Bala Subramaniyan, Chieh (Ross) Wang, Yunli Shao, Wan Li, Hong Wang, Guohui Zhang, Tianwei Ma. (2022) "Hybrid Recurrent Neural Network Modeling for Traffic Delay Prediction Along Signalized Intersections: A Case Study in Hawaii." *Transportation Research Board Annual Conference*, Jan. 7-13, 2022. Washington D.C.

11. Wan Li, Chieh Wang, Yunli Shao, Hong Wang, Jon Ringler, Guohui Zhang, Tianwei Ma, and Danielle Chou (2021) "Hybrid Neural Network Modeling for Multiple Intersections along Signalized Arterials - Current Situation and Some New Results", *VEHICULAR 2021 : The Tenth International Conference on Advances in Vehicular Systems, Technologies and Applications*

12. Jian Yu and Tianwei Ma, (2019) "Ambient Energy Harvesting: An Electrostatic Approach Based on Droplet Capacitors", *Conference for Energy Harvesting from Infrastructure and Ocean Systems (EHIOS), November 4 - 6, 2019*

13. Hui Zhang and Tianwei Ma, (2018) "Nonlinear Vibration Energy Harvesting – Issues and Opportunities.", *Energy Harvesting Society Meeting* Sept. 5-7 in Philadelphia, Penn. (USA)

14. Hui Zhang and Tianwei Ma, (2018) "Effects of non-resistive electrical loads on vibration energy harvesting performance.", *Energy Harvesting Society Meeting* Sept. 5-7 in Philadelphia, Penn. (USA)

15. Zhang, H. and Ma, T. W. "New insights into vibration-based energy harvesting", *Proceedings of SPIE*, March 2015, San Diego, CA, USA

16. Bell, M. and Ma, T. W. "Recovering bridge deflections from collocated acceleration and strain measurements", *Proceedings of SPIE*, March 2015, San Diego, CA, USA

17. Zhang, H. and Ma, T. W. "Scavenging Energy From Ambient Vibrations Using Nonlinear Oscillators with Asymmetrical Potential Well", *ASCE Earth and Space Conference,* October 2014, St. Louis, USA

18. Lu, W., Xu, N. X., and Ma, T. W. "Internal-Model Kalman Filtering for Structural Deflection Estimate", *The first International Congress on Advances in Structural Engineering and Mechanics*, September 2011, Seoul, Korea

19. Lu, W., Xu, N. X., and Ma, T. W. "Bridge Deflection Monitoring Based on Acceleration Measurements", *International Symposium On Innovation & Sustainability Of Structures In Civil Engineering*, October 28-30, 2011, Xiamen, China

20. Yu, X.C., Ma, T. W., and Falzarano, J. M. "Application of A New Semi-active Control Strategy to Dynamic Response Control of An Offshore Platform Using MR Dampers", *Proceedings of the ASME 9th International Conference on Ocean, Offshore, and Arctic Engineering, OMAE* June 6-11, 2010, Shanghai, China

21. Ma, T. W., Xu, N. S., and Zhang, H. "A Novel Vibration-based Energy Harvester Using Pendulum-generator System", *Proceedings of the ASCE Earth and Space Conference*, March 16-18, 2010 Honolulu, HI (invited)

22. Ma, T. W., Xu, N. S., and Zhang, H. "A Low-frequency Vibration-based Energy Harvester Utilizing Parametrical Resonance" *Proceedings of the 5th International Workshop on Energy Harvesting*, March 3-5, 2010 Blacksburg, VA

23. Ma, T. W. and Labou, M. "On Energy Harvesting Using Nonlinear Oscillators", *Proceedings of Annual NSF Awardees Conference*, June 2009, Honolulu, HI

24. Zhang, L. M., Ma, T. W., Liu, X. L., and Chen, W. F. "Vulnerability of Framed Structures with Existing Localized Damage" *Proceedings of The 14th World Conference on Earthquake Engineering*, August 2008, Beijing, China

25. Iu, J., Ma, T. W., Chan, S. L., and Chen, W. F. "Integrating Design and Analysis: A System Approach", *Proceedings of CTBUH the 8th World Congress*, 2008, Dubai, India

26. Cho, S. Chan, S. L., Chen, W. F, and Ma, T. W. "Modern Simulation Based Design" *Proceedings of CTBUH the 8th World Congress*, 2008, Dubai, India

27. Zhang, L. M., Ma, T. W., Park, S. H., Liu, X. L., and Chen, W. F. "Progressive Collapse and Vulnerability of a Framed Structure Subject to a Blast Load", *Proceedings of The first International Workshop on Performance, Protection and Strengthening of Structures under Extreme Loading*, September 2007, Vancouver, Canada

28. Ma, T. W. and Xu, N. S. "Continuous Time Parameter Estimation of Multistory Buildings", *Proceedings of SPIE, Volume 6529*, March 2007, San Diego, CA

29. Han, X., He, Q., Sebastijanovic, N., Ma, T. W., Yang, H. T. Y. "Developing Hybrid Structural Health Monitoring Via Integrated Global Sensing and Local Infrared Imaging", *Proceedings of SPIE, Volume 652*, March 2007, San Diego, CA

30. Ma, T. W., Zhao, W. B., and Liu, J. M. "A MEMS Vibration Sensor Based on Mach Zehnder Interferometers", *Proceedings of SPIE, Volume 6529*, March 2007, San Diego, CA

31. Liu, J. M., Lan, Y. J., Zhou, Y., Ma, T. W., Pan, Y. J., and Gong, W. G. "Significance Evaluation of Geometric Features in Classification of Chinese Facial Images", *Proceedings of SPIE, Volume 6531*, March 2007, San Diego, CA

32. Liu, J. M., Mo, X. J., Wang, J., Ma, T. W., and Pan Y. J. "Measuring Three-Axis Force with Four-Part Tactile Sensing Technique", *Proceedings of SPIE, Volume 6529*, March 2007, San Diego, CA

33. Johansen, J., Ma, T. W. and Yang, H. T. Y. "Multi-Objective Structural Control Strategies with Pole Placement Constraints"*4th World Conference on Structural Control and Monitoring*, July 2006, San Diego, CA

34. Ma, T. W. "Digital Implementation of Real Time Structural Damage Detection and Assessment ", *the Third International Workshop on Advanced Smart Materials and Smart Structures Technology*, May 28 – 30, 2006, Tahoe, NV

35. Sebastijanovic, N., Ma, T. W., Yang, H. T. Y., and Chang, C. C. "Structural Damage Detection and Assessment Using Acceleration Feedback" *Proceedings of SPIE*, March 2006, San Diego, CA

36. Sebastijanovic, N., Ma. T. W. and Yang, H. T. Y. "Panel Flutter Detection and Control by Monitoring Eigenvectors" *Proceedings of SPIE, Vol. 5394*, March, 2005, San Diego, CA

37. Ma, T. W., Yang, H. T. Y. and Chang, C. C. "Direct Damage Diagnosis of Structural Component Using Global Vibration Response" *Proceedings of SPIE, Volume 5394*, March 2004, pp. 192–200, San Diego, CA

38. Ma, T. W., Yang, H. T. Y. and Chang, C. C "Structural Health Monitoring Using Time domain Residual Generator Technique" *Proceedings of the 4th Int. Workshop on Structural Health Monitoring*, pp. 445–452, September 2003, Palo Alto, CA

39. Ma, T. W., Wrobleski, M. S. and Yang, H. T. Y. "Improved Sensor Fault Accommodation Neural Networks for Structural Responses" *Proceedings of the First European Workshop on Structural Health Monitoring*, pp. 1099 – 1106, August 2002, Paris

40. Wrobleski, M. S., Ma, T. W. and Yang, H. T. Y. "Application and Evaluation of Sensor Fault Detection and Accommodation Neural networks on a Benchmark Structure" *Proceedings of the 3rd International Workshop on Structural Health Monitoring*, pp. 534-539, September 2001, Palo Alto, CA

Invited Talks

Ambient Energy Harvesting: An Electrostatic Approach Based on Droplet Capacitors, Beijing Institute of Nanoenergy and Nanosystems, Chinese Academy of Sciences, 2018

Harvesting Energy from Environment: Opportunities and Challenges, Duke University, 2015

Harvesting Energy from Vibrations, Shanghai Jiao Tong University, 2012

Solar Chimney – A Promising Alternative, Asian Pacific Clean Energy Summit and Expo, Honolulu, HI, September 2009

Harvesting Mechanical Energy Using Diamagnetic Materials, AFOSR MURI Workshop, Virginia Tech., Blacksburg, VA, August 2009

Harvesting Mechanical Energy from Aerospace Structures Using Diamagnetic Materials and Nonlinear Levitated Device Architecture, AFOSR, Washington D. C., April 2009

Collapse Analysis of Framed Structures Under Extreme Conditions, Department of Civil & Environmental Engineering, Princeton University, February 2008

Monitoring of Concrete Highway Bridges Using Smart Sensors, Bridge Design Branch, Hawaii Department of Transportation, February 2006

Modeling, Control, and Monitoring of Complex structures, Department of Aerospace and Mechanical Engineering, University of Notre Dame, March 2005

A Path toward Smart Structures: Modeling, Control, and Monitoring, , Department of Civil & Environmental Engineering, Texas A&M University, March 2005

A Path toward Smart Structures: Modeling, Control, and Monitoring, Department of Civil & Environmental Engineering, Duke University, April 2005

Teaching

Courses Taught

CEE 381: Structural Analysis (Undergraduate)

CEE 482: Indeterminate Structures (Undergraduate)

CEE 681: Theory of Modern Structural Analysis (Graduate)

CEE 696: Structural Health Monitoring and Control (Graduate)

CEE 675: Structural Dynamics I (Graduate)

CEE 677: Introduction to Smart Structures Technology (Graduate)

Professional Activities

Chairman, Board of Directors, Hawaii Autonomous Vehicle Institute, 2018 - present

Conference Co-Chair, Energy Harvesting from Infrastructure and Ocean Systems, Hoboken, NJ, Nov. 4-6, 2019

Hawaii Aerospace Advisory Committee (Appointed by Governor), 2017 - 2019

State of Hawaii Transportation Innovation Council, 2017 - present

PE, Sichuan, China, 1996–1999.

Jury Team Member, Hawaiian Cement 2006.

Reviewer for *Nature Communications, Scientific Reports, Mechanical Systems and Signal Processing, Physical Review Applied, Journal of Sound and Vibration, ASME Journal of Vibration and Acoustics, ASCE Journal of Computing in Civil Engineering, ASCE Journal of Structural Engineering, ASCE Journal of Engineering Mechanics, International Journal of Structural Engineering and Mechanics, Journal of Mechanical Engineering Science, AIAA Journal, Smart Materials and Structures, IEEE Transactions on Automation Science and Engineering, Journal of Civil Engineering and Management, Engineering Structures, Ocean Engineering, Computer Aided Civil & Infrastructure Engineering, etc.*

NSF Review Panelist

Proposal reviewer for NOAA, NYUAD

Member, Structural Control Committee of the Technical Administrative Committee on Analysis and Computation, ASCE, September 2005 – present

Member, Data Informatics Committee, Asia-Pacific Network of Centers for Research in Smart Structures Technology (ANCRiSST), 2006 – present

Intramural service: Served as member and Chair of various Committees at departmental, college, and university levels.

Last updated: March 30, 2022