Scott Moura

Associate Professor | Director of eCAL
PATH Faculty Director | Chair of Engineering Science
Clare and Hsieh Wen Shen Endowed Distinguished Professorship
Civil & Environmental Engineering
University of California, Berkeley

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Education

UC President's Postdoctoral Fellow (2011-2013) **University of California, San Diego**
Topic: *PDE Control and Estimation Techniques for Advanced Battery Management Systems*
Advisor: Professor Miroslav Krstić

Ph.D., Mechanical Engineering (2011) **University of Michigan, Ann Arbor**
Dissertation: *Techniques for Battery Health Conscious Power Management via Electrochemical Modeling and Optimal Control*
Advisors: Professor Jeffrey L. Stein (Michigan) and Professor Hosam K. Fathy (Penn State)
Committee: Prof. Jeffrey Stein (Michigan-ME), Prof. Hosam Fathy (Penn State-MNE), Prof. Huei Peng (Michigan-ME), Prof. Jessy Grizzle (Michigan-EECS:Systems)
Major Field: Systems and Controls

M.S.E, Mechanical Engineering (2008) **University of Michigan, Ann Arbor**
Thesis: *Plug-in Hybrid Electric Vehicle Power Management: Optimal Control & Battery Sizing*
Advisors: Professor Jeffrey L. Stein (Michigan), Professor Hosam K. Fathy (Penn State), and Professor Duncan S. Callaway (UC Berkeley)
Major Field: Systems and Controls

B.S., Mechanical Engineering (2006) **University of California, Berkeley**
Graduated with Honors

Research Interests

Theory: Control & estimation, optimization, data science
Applications: Batteries; automated, connected & electrified vehicles; clean energy systems

Awards & Honors

Best Student Paper Finalist (as advisor, student is Shida Jiang) (2024)
2024 American Control Conference, Toronto, ON Canada

Energy Systems Best Paper (as advisor, student is Ruiting Wang) (2024)
2024 American Control Conference, Toronto, ON Canada

Keynote Speaker, Gordon Research Conference: Batteries (2022)

ASME Dynamic Systems and Control Division Young Investigator Award (2021)

UC Berkeley Institute of Transportation Studies Faculty of the Year (2020)

Energy Systems Best Paper Award (as advisor, student is Dong Zhang) (2020)
2020 American Control Conference, Denver, CO USA

NSF CAREER (2019-2024)

IFAC Young Author Award Finalist (as advisor, student is Sangjae Bae) (2018)
2nd IFAC Conference on Cyber-Physical & Human Systems, Miami, FL USA

Best Student Paper Finalist (as advisor, student is Saehong Park) (2018)

2018 American Control Conference, Milwaukee, WI USA

Energy Systems Best Paper Award Finalist (as advisor, student is Dong Zhang) (2018)
2018 American Control Conference, Milwaukee, WI USA

National Academy of Engineering, China-America Frontiers of Engineering Participant (2017)

Carol D. Soc Distinguished Graduate Student Mentoring Award for Junior Faculty (2017)

1st LG Chem Battery Innovation Contest Winner (2017)

Blavatnik Awards for Young Scientists – UC Berkeley Campus nominee (2016)

O. Hugo Schuck Best Paper Award, American Control Conference (2015)
"Sensitivity-Based Interval PDE Observer for Battery SOC Estimation"

IEEE Transactions on Smart Grid Best Reviewer Award (2015)

Siebel Energy Institute Research Grant (2 awards) (2015)

Energy Systems Best Paper Award
2015 ASME Dynamic Systems and Control Conference, Columbus, OH USA

Best Student Paper Award (as advisor, student is Hector Perez)
2015 American Control Conference, Chicago, IL USA

Hellman Fellow (2015)

University of California Presidential Postdoctoral Fellowship
University of California (2011 - 2013)

National Science Foundation (NSF) Graduate Research Fellowship
National Science Foundation (2008 - 2011)

ProQuest Distinguished Dissertation Award, Honorable Mention
Rackham Graduate School, University of Michigan (2011)

Distinguished Leadership Award
College of Engineering, University of Michigan (2009)

Rackham Merit Fellowship (RMF)
University of Michigan Rackham Graduate School (2006 – 2011)

2012 ASME Dynamic Systems and Control Conference, Ft Lauderdale, CA USA
Semi-Plenary Speaker
Best Presentation in Session

2012 American Control Conference, Montreal, QC Canada
Best Presentation in Session

2011 American Control Conference, San Francisco, CA USA
Best Student Paper Finalist
Best Presentation in Session

2009 ASME Dynamic Systems and Control Conference, Hollywood, CA USA
Best Student Paper Finalist
Best Presentation in Session

2009 American Control Conference, Baltimore, MD USA
Best Presentation in Session

2008 ASME Dynamic Systems and Control Conference, Ann Arbor, MI USA
Best Presentation in Session

2008 Society of Hispanic Professional Engineers Conference, Phoenix, AZ USA
1st Place Technical Paper Competition

2008 Engineering Graduate Symposium, University of Michigan
2nd Place Poster, Control Systems Session

2007 Engineering Graduate Symposium, University of Michigan
2nd Place Oral Presentation, System Analysis and Control Session

Michigan Memorial Phoenix Energy Institute (MMPEI)
MMPEI-Rackham Energy Fellowship, Honorable Mention (2007 – 2008)

SHPE Academic Achievement Award
Society of Hispanic Engineers and Scientists, University of Michigan (2007)

National Science Foundation (NSF)
Graduate Research Fellowship Program (GRFP), Honorable Mention (2006 – 2007)

Publications

Total Citations ≥ 12,500 | h-index = 54 | i10-index = 128 (Google Scholar, February 2025)
Bold names indicate students that I have primarily mentored

Peer-Reviewed Journals

J1. S. J. Moura, D. S. Callaway, H. K. Fathy, and J. L. Stein, "Tradeoffs between Battery Energy Capacity and Stochastic Optimal Power Management in Plug-in Hybrid Electric Vehicles," *Journal of Power Sources*, v 195, n 9, p 2979-2988, May 2010. DOI: 10.1016/j.jpowsour.2009.11.026

J2. S. Bashash, S. J. Moura, J. C. Forman, and H. K. Fathy, "Plug-in hybrid electric vehicle charge pattern optimization for energy cost and battery longevity," *Journal of Power Sources*, v 196, n 1, p 541-549, January 2011. DOI: 10.1016/j.jpowsour.2010.07.001

J3. S. J. Moura, H. K. Fathy, D. S. Callaway, and J. L. Stein, "A Stochastic Optimal Control Approach for Power Management in Plug-in Hybrid Electric Vehicles," *IEEE Transactions on Control Systems Technology*, v 19, n 3, p 545-555, May 2011. DOI: 10.1109/TCST.2010.2043736

J4. S. J. Moura, J. C. Forman, S. Bashash, J. L. Stein, and H. K. Fathy, "Optimal Control of Film Growth in Lithium-Ion Battery Packs via Relay Switches," *IEEE Transactions on Industrial Electronics*, v 58, n 8, p 3555-3566, Aug 2011. DOI: 10.1109/TIE.2010.2087294

J5. S. Bashash, S. J. Moura, and H. K. Fathy, "On the Aggregated Grid Load Imposed by Battery Health-Conscious Charging of Plug-in Hybrid Electric Vehicles," *Journal of Power Sources*, v 196, n 20, p 8747-8754, Oct 2011. DOI: 10.1016/j.jpowsour.2011.06.025

J6. J. C. Forman, S. J. Moura, J. L. Stein, H. K. Fathy, "Genetic Identification and Fisher Identifiability Analysis of the Doyle-Fuller-Newman Model from Experimental Cycling of a $LiFePO_4$ Cell," *Journal of Power Sources*, v 210, p 263-275, July 2012. DOI: 10.1016/j.jpowsour.2012.03.009

J7. S. J. Moura and H. K. Fathy, "Optimal Boundary Control of Reaction-Diffusion PDEs via Weak Variations," *ASME Journal of Dynamic Systems, Measurement, and Control*, v 135, n 3, pp. 034501-034508, Feb 2013. DOI: 10.1115/1.4023071

J8. S. J. Moura, J. L. Stein, and H. K. Fathy, "Battery Health Conscious Power Management in Plug-in Hybrid Electric Vehicles via Electrochemical Modeling and Stochastic Control," *IEEE Transactions on Control Systems Technology*, v 21, n 3, pp. 679-694, May 2013. DOI: 10.1109/TCST.2012.2189773

J9. S. J. Moura and Y. A. Chang, "Lyapunov-based Switched Extremum Seeking for Photovoltaic Power Maximization," *Control Engineering Practice*, v 21, n 7, pp. 971-980, July 2013. DOI: 10.1016/j.conengprac.2013.02.009

J10. S. J. Moura, N. A. Chaturvedi, M. Krstic, "Adaptive PDE Observer for Battery SOC/SOH Estimation via an Electrochemical Model," *ASME Journal of Dynamic Systems, Measurement, and Control*, v 136, n 1, pp. 011015 – 011026, Oct 2013. DOI: 10.1115/1.4024801

J11. S. J. Moura, J. Bendsten, V. Ruiz, "Parameter Identification of Aggregated Thermostatically Controlled Loads for Smart Grids using PDE Techniques," *International Journal of Control*, v 87, n 7, pp. 1373-1386, May 2014 (Invited Paper). DOI: 10.1080/00207179.2014.915083

J12. **C. Sun**, X. Hu, S. J. Moura, F. Sun, "Velocity Predictors for Predictive Energy Management in Hybrid Electric Vehicles," *IEEE Transactions on Control Systems Technology*, v 23, n 3, pp. 1197-1204, May 2015. DOI: 10.1109/TCST.2014.2359176

J13. **C. Sun**, S. J. Moura, X. Hu, J. K. Hedrick, F. Sun, "Dynamic Traffic Feedback Data Enabled Energy Management in Plug-in Hybrid Electric Vehicles," *IEEE Transactions on Control Systems Technology*, v 23, n 3, pp. 1075-1086, May 2015. DOI: 10.1109/TCST.2014.2361294

J14. S. Saxena, **C. Le Floch**, J. MacDonald, S. J. Moura, "Quantifying EV Battery End-of-Life through Analysis of Travel Needs with Vehicle Powertrain Models," *Journal of Power Sources*, v 282, n 15, pp. 265-276, May 2015. DOI: 10.1016/j.jpowsour.2015.01.072

J15. A Ghaffari, S. J. Moura, M. Krstic, "PDE-based Modeling, Control, and Stability Analysis of Heterogeneous Thermostatically Controlled Load Populations," *ASME Journal of Dynamic Systems, Measurement, and Control*, v 137, n 10, pp. 101009-101009-9, July 2015. DOI: 10.1115/1.4030817.

J16. **H. E. Perez**, N. Shahmohammadhamedani, S. J. Moura, "Enhanced Performance of Li-ion Batteries via Modified Reference Governors & Electrochemical Models," *IEEE/ASME Transactions on Mechatronics*, v 20, n 4, pp. 1511-1520, Aug 2015. DOI: 10.1109/TMECH.2014.2379695

J17. S. Saxena, J. MacDonald, S. J. Moura, "Charging Ahead on the Transition to Electric Vehicles with Standard 120 V Wall Outlets," *Applied Energy*, v 157, pp. 720-728, Nov 2015. DOI: 10.1016/j.apenergy.2015.05.005

J18. **E. Burger**, S. J. Moura, "Gated Ensemble Learning Method for Demand-Side Electricity Load Forecasting," *Energy and Buildings*, v 109, pp. 23-34, Dec 2015. DOI: 10.1016/j.enbuild.2015.10.019.

J19. X. Hu, N. Murgovski, B. Egardt, S. J. Moura, D. Cao, "Integrated Optimization of Battery Sizing, Charging, and Power Management in Plug-in Hybrid Electric Vehicles," *IEEE Transactions on Control Systems Technology*, vol. 24, no. 3, pp. 1036-1043, May 2016. DOI: 10.1109/TCST.2015.2476799.

J20. **C. Le Floch**, F. Belletti, S. J. Moura, "Optimal Charging of Electric Vehicles for Load Shaping: a Dual Splitting Framework with Explicit Convergence Bounds," *IEEE Transactions on Transportation Electrification*, vol. 2, no. 2, pp. 190-199, June 2016. DOI: 10.1109/TTE.2016.2531025.

J21. **C. Sun**, F. Sun, S. J. Moura, "Nonlinear Predictive Energy Management of Residential Buildings with Photovoltaics & Batteries," *Journal of Power Sources*, v 325, pp. 723-731, Sep 2016. DOI: 10.1016/j.jpowsour.2016.06.076

J22. X. Wu, X. Hu, S. J. Moura, X. Yin, V. Pickert, "Stochastic Control of Smart Home Energy Management with PEV Energy Storage and Photovoltaic Array," *Journal of Power Sources*, v 333, pp. 203-212, Nov 2016. DOI: 10.1016/j.jpowsour.2016.09.157

J23. **E. Burger**, S. J. Moura, "Recursive Parameter Estimation of Thermostatically Controlled Loads via Unscented Kalman Filter," *Sustainable Energy, Grids and Networks*, v 8, pp. 12-25, Dec 2016. DOI: 10.1016/j.segan.2016.09.001

J24. B. Wang, Z. Liu, S. Li, S J. Moura, H. Peng, "State of Charge Estimation for Lithium-Ion Batteries Based on a Nonlinear Fractional Model," *IEEE Transactions on Control Systems Technology*, v 25, n 1, pp. 3-11, Jan 2017. DOI: 10.1109/TCST.2016.2557221

J25. S. J. Moura, F. Bribiesca Argomedo, R. Klein, A. Mirtabatabaei, M. Krstic, "Battery State Estimation for a Single Particle Model with Electrolyte Dynamics," *IEEE Transactions on Control Systems Technology*, v 25, n 2, pp. 453-468. Mar 2017. DOI: 10.1109/TCST.2016.2571663

J26. **E. Burger**, S. J. Moura, "Generation Following with Thermostatically Controlled Loads via Alternating Direction Method of Multipliers Sharing Algorithm," *Electric Power Systems Research*, v 146, pp. 141-160, Mar 2017. DOI: 10.1016/j.epsr.2016.12.001

J27. **H. E. Perez**, S. Dey, X. Hu, S. J. Moura, "Optimal Charging of Li-Ion Batteries via a Single Particle Model with Electrolyte and Thermal Dynamics," *Journal of the Electrochemical Society*, v 164, n 7, pp. A1679-A1687, June 2017. DOI: 10.1149/2.1301707jes

J28. **H. E. Perez**, X. Hu, S. Dey, S. J. Moura, "Optimal Charging of Li-Ion Batteries with Coupled Electro-Thermal-Aging Dynamics," *IEEE Transactions on Vehicular Technology*, v 66, n 9, pp. 7761-7770, September 2017. DOI: 10.1109/TVT.2017.2676044

J29. **C. Le Floch**, E. C. Kara, S. J. Moura, "PDE Modeling and Control of Electric Vehicle Fleets for Ancillary Services: A Discrete Charging Case," *IEEE Transactions on Smart Grid*, v9, n 2, pp. 573-581, March 2018. DOI: 10.1109/TSG.2016.2556643

J30. X. Wu, S. J. Moura, X. Hu, X. Yin, "Stochastic Optimal Energy Management of Smart Home with PEV Energy Storage," *IEEE Transactions on Smart Grid*, v9, n 3, pp. 2065-2075, May 2018. DOI: 10.1109/TSG.2016.2606442

J31. **S. Park, D. Kato, Z. Gima**, R. Klein, S. J. Moura, "Optimal Experimental Design for Parameterization of an Electrochemical Lithium-ion Battery Model," *Journal of the Electrochemical Society*, v 165, n 7, pp. A1309-A1323, May 2018. DOI: 10.1149/2.0421807jes

J32. **H. Zhang**, S. J. Moura, Z. Hu, W. Qi, Y. Song, "A Second Order Cone Programming Model for PEV Fast-Charging Station Planning", *IEEE Transactions on Power Systems*, v33, n 3, pp. 2763-2777, May 2018. DOI: 10.1109/TPWRS.2017.2754940

J33. Y. Xu, S. Colak, E. C. Kara, S. J. Moura, M. Gonzalez, "Planning for Electric Vehicle Needs by Coupling Charging Profiles with Urban Mobility," *Nature Energy*, v 3, pp. 484-493, Jun 2018. DOI: 10.1038/s41560-018-0136-x

J34. **H. Zhang**, S. J. Moura, Z. Hu, Y. Song, "PEV Fast-Charging Station Siting and Sizing on Coupled Transportation and Power Networks," *IEEE Transactions on Smart Grid*, v9, n 4, pp. 2595-2605, July 2018. DOI: 10.1109/TSG.2016.2614939

J35. **H. Zhang**, S. J. Moura, Z. Hu, W. Qi, Y. Song, "Joint Planning of PEV Fast-Charging Network and Distributed PV Generation Using the Accelerated Generalized Benders Decomposition," *IEEE Transactions on Transportation Electrification*, v4, n 3, pp. 789-803, Sep 2018. DOI: 10.1109/TTE.2018.2847244

J36. M. Hao, J. Li, **S. Park**, S. J. Moura, C. Dames, "Efficient thermal management of Li-ion batteries with a passive interfacial thermal regulator based on shape memory alloy," *Nature Energy*, v3, n10, pp. 899-906, Oct 2018. DOI: 10.1038/s41560-018-0243-8. **Nature Energy News & Views.**

J37. S. Dey, **H. Perez**, S. J. Moura, "Model-based Battery Thermal Fault Diagnostics: Algorithms, Analysis and Experiments," *IEEE Transactions on Control Systems Technology*, v27, n2, pp. 576-587, Mar 2019. DOI: 10.1109/TCST.2017.2776218

J38. Y. Wang, S. J. Moura, S. Advani, A Prasad, "Power management system for a fuel cell/battery hybrid vehicle incorporating fuel cell and battery degradation," *International Journal of Hydrogen Energy*, v44, n16, pp. 8479-8492, Mar 2019. DOI: 10.1016/j.ijhydene.2019.02.003

J39. **C. Le Floch**, S. Bansal, C. Tomlin, S. J. Moura, M. Zeilinger, "Plug-and-Play Model Predictive Control for Load Shaping and Voltage Control in Smart Grids," *IEEE Transactions on Smart Grid*, v10, n3, pp. 2334-2344, May 2019. DOI: 10.1109/TSG.2017.2655461

J40. **H. Zhang**, Z. Hu, **E. Munsing**, S. J. Moura, Y. Song, "Data-driven Chance-constrained Regulation Capacity Offering for Distributed Energy Resources," *IEEE Transactions on Smart Grid*, v10, n3, pp. 2713-2725, May 2019. DOI: 10.1109/TSG.2018.2809046

J41. M. Memarzadeh, S. J. Moura, A. Horvath, "Optimizing dynamics of integrated food-energy-water systems under the risk of climate change," *Environmental Research Letters*, v14, n7, pp. 074010, July 2019. DOI: 10.1088/1748-9326/ab2104

J42. Y. Wang, S. J. Moura, S. Advani, A Prasad, "Optimization of powerplant component size on board a fuel cell/battery hybrid bus for fuel economy and system durability," *International Journal of Hydrogen Energy*, v44, n33, pp. 18283 – 18292, July 2019. DOI: 10.1016/j.ijhydene.2019.05.160

J43. S. Dey, **H. E. Perez**, S. J. Moura, "Robust Fault Detection of a Class of Uncertain Linear Parabolic PDEs," *Automatica*, v107, n1, pp. 502-510, Sept 2019. DOI: 10.1016/j.automatica.2019.06.014

J44. H. Zhang, C. Sheppard, T. Lipman, **T. Zeng**, S. J. Moura "Charging Infrastructure Demands of Shared-Use Autonomous Electric Vehicles in Urban Areas," *Transportation Research Part D: Transport and Environment*, v78, pp. 102210, Jan 2020. DOI: 10.1016/j.trd.2019.102210

J45. **D. Zhang,** S. Dey, H. E. Perez, S. J. Moura, "Real-Time Capacity Estimation of Lithium-Ion Batteries Utilizing Thermal Dynamics," *IEEE Transactions on Control Systems Technology*, v28, n3, pp. 992-1000, May 2020. DOI: 10.1109/TCST.2018.2885681

J46. **T. Zeng,** H. Zhang, S. J. Moura, "Solving Overstay and Stochasticity in PEV Charging Station Planning with Real Data," *IEEE Transactions on Industrial Informatics*, v16, n5, pp. 3504 – 3514, May 2020. DOI: 10.1109/TII.2019.2955997

J47. C. Sun, J. Guanetti, F. Borrelli, S. J. Moura, "Optimal Eco-Driving Control of Connected and Autonomous Vehicles Through Signalized Intersections," *IEEE Internet of Things Journal*, v7, n5, pp. 3759-3773, May 2020. DOI: 10.1109/JIOT.2020.2968120

J48. **D. Zhang**, S. Dey, L. Couto, S. J. Moura, "Battery Adaptive Observer for a Single Particle Model with Intercalation-Induced Stress," *IEEE Transactions on Control Systems Technology*, v28, n4, pp. 1363-1377, July 2020. DOI: 10.1109/TCST.2019.2910797

J49. M. Memarzadeh, S. J. Moura, A. Horvath, "Multi-agent management of integrated food-energy-water systems using stochastic games: from Nash equilibrium to the social optimum," *Environmental Research Letters*, v15, n9, pp. 0940a4, Sep 2020. DOI: 10.1088/1748-9326/abadca

J50. H. Zhang, C. J. R. Sheppard, T. E. Lipman, S. J. Moura, "Joint Fleet Sizing and Charging System Planning for Autonomous Electric Vehicles," *IEEE Transactions on Intelligent Transportation Systems*, v21, n11, pp. 4725-4738, Nov 2020. DOI: 10.1109/TITS.2019.2946152

J51. A. Halder, K. Caluya, **B. Travacca**, S. J. Moura, "Hopfield Neural Network Flow: A Geometric Viewpoint," *IEEE Transactions on Neural Networks and Learning Systems*, v31, n11, pp 4869-4880, Nov 2020. arXiv. DOI: 10.1109/TNNLS.2019.2958556

J52. **L. N. Dunn, I. Kavvada, M. D. Badoual**, and S. J. Moura, "Bayesian Hierarchical Methods for Modeling Electrical Grid Component Failures," *Electrical Power Systems Research*, v189, pp. 106789, December 2020. DOI: 10.1016/j.epsr.2020.106789

J53. **Z. Zhou**, S. J. Moura, H. Zhang, X. Zhang, Q. Guo, H. Sun, "Power-Traffic Network Equilibrium Incorporating Behavioral Theory: A Potential Game Perspective," *Applied Energy*, v289, pp. 116703, May 2021. DOI: 10.1016/j.apenergy.2021.116703

J54. **S. Woo, S. Bae**, S. J. Moura, "Pareto Optimality in Cost and Service Quality for an Electric Vehicle Charging Facility," *Applied Energy*, v 290, pp. 116779, May 2021. DOI: 10.1016/j.apenergy.2021.116779.

J55. **T. Zeng, S. Bae, B. Travacca**, S. J. Moura, "Inducing Human Behavior to Maximize Operation Performance at PEV Charging Station," *IEEE Transactions on Smart Grid*, v12, n4, pp. 3353-3363, July 2021. DOI: 10.1109/TSG.2021.3066998

J56. **D. Zhang**, L. D. Couto, S. J. Moura, "Electrode-Level State Estimation in Lithium-ion Batteries via Kalman Decomposition," *IEEE Control Systems Letters*, v5, n5, pp. 1657-1662, Nov 2021. DOI: 10.1109/LCSYS.2020.3042751

J57. **D. Zhang**, S. Dey, S. Tang, R. Drummond, S. J. Moura, "Battery Temperature Estimation with an Uncertain Semilinear Thermal PDE Model," *Automatica*, v133, pp. 109849, Nov 2021. DOI: 10.1016/j.automatica.2021.109849

J58. I. Kavvada, S. J. Moura, A. Horvath, N. A. Abrahamson, "Probabilistic Seismic Hazard Analysis for Spatially Distributed Infrastructure Considering the Correlation of Spectral Acceleration Across Spectral Periods", *Earthquake Spectra*, v38, n2, Nov 2021. **2023 EERI Annual Graduate Student Paper Award**. DOI: 10.1177/87552930211058211

J59. **S. Bae**, Y. Kim, Y. Choi, J. Guanetti, P. Gill, F. Borrelli, S. J. Moura, "Ecological Adaptive Cruise Control of Plug-in Hybrid Electric Vehicle with Connected Infrastructure and On-Road Experiments," *ASME Journal of Dynamic Systems, Measurement, and Control*, v144, n1, pp. 011109, January 2022. DOI: 10.1115/1.4053187

J60. B. Haydon, J. Cole, **L. Dunn, P. Keyantuo**, T. Katopodes-Chow, S. J. Moura, C. Vermillion, "Generalized Empirical Regret Bounds for Control of Renewable Energy Systems in Spatiotemporally Varying Environments", *ASME Journal of Dynamic Systems, Measurement, and Control*, v 144, n 4, pp. 044501, April 2022. DOI: 10.1115/1.4052396

J61. **D. Zhang**, L. D. Couto, P. Gill, S. Benjamin, W. Zeng, S. J. Moura, "Thermal Enhanced Adaptive Interval Estimation in Battery Packs with Heterogeneous Cells," *IEEE Transactions to Control Systems Technology*, v30, n3, pp. 1102-1115, May 2022. DOI: 10.1109/TCST.2021.3091108

J62. **S. Park**, A. Pozzi, M. Whitmeyer, H. E. Perez, A. Kandel, G. Kim, Y. Choi, W. T. Joe, D. M. Raimondo, S. J. Moura, "A Deep Reinforcement Learning Framework for Fast Charging of Li-ion Batteries," *IEEE Transactions on Transportation Electrification*, v8, n2, pp. 2770-2784, June 2022. DOI: 10.1109/TTE.2022.3140316

J63. H. Yu, **S. Park**, A. M. Bayen, S. J. Moura, M. Krstic, "Reinforcement Learning versus PDE Backstepping and PI Control for Congested Freeway Traffic," *IEEE Transactions on Control Systems Technology*, v30, n4, pp. 1595-1611, July 2022. DOI: 10.1109/TCST.2021.3116796

J64. L. D. Couto, R. Romagnoli, S. Park, D. Zhang, S. J. Moura, M. Kinnaert, E. Garone, "Faster and Healthier Charging of Lithium-Ion Batteries via Constrained Feedback Control," *IEEE Transactions on Control Systems Technology*, v30, n5, pp. 1990-2001, Sept 2022. DOI: 10.1109/TCST.2021.3135149

J65. **I. Kavvada**, A. Horvath, S. J. Moura, "Aligning sustainability and regional earthquake hazard mitigation planning: Integrating greenhouse gas emissions and vertical equity," *Environmental Research: Infrastructure and Sustainability*, v2, n4, pp. 045013, Dec 2022. DOI: 10.1088/2634-4505/aca9f3.

J66. **Y. Zhao, T. Zeng**, Z. Allybokus, Y. Guo, S. J. Moura, "Joint Design for Electric Fleet Operator and Charging Service Provider: Understanding the Non-Cooperative Nature," *IEEE Transactions on Intelligent Transportation Systems*, v24, n1, pp. 115-127, Jan. 2023. DOI: 10.1109/TITS.2022.3215926

J67. H. Tu, S. J. Moura, Y. Wang, H. Fang, "Integrating Physics-Based Modeling with Machine Learning for Lithium-Ion Batteries," *Applied Energy*, v329, pp. 120289, Jan. 2023. DOI: 10.1016/j.apenergy.2022.120289.

J68. **U. Vijay, S. Woo**, S. J. Moura, A. Jain, D. Rodriguez, S. Gambacorta, G. Ferrara, L. Lanuzza, C. Zulberti, E. Mellekas, C. Papa, "Valuation of Urban Public Bus Electrification with Open Data," *Journal of Advanced Transportation*, v2023, Article ID 5021883, 20 pages, Feb 2023. DOI: 10.1155/2023/5021883

J69. **S. Bae**, D. Isele, A. Nakhaei, P. Xu, A. Miranda Añon, C. Choi, K. Fujimura, S. J. Moura, "Lane-Change in Dense Traffic with Model Predictive Control and Neural Networks," *IEEE Transactions on Control Systems Technology*, v21, n2, pp. 646-659, Mar 2023, DOI: 10.1109/TCST.2022.3193923.

J70. A. Pozzi, S. J. Moura, D. Toti, "A Deep Learning-Based Predictive Controller for the Optimal Charging of a Lithium-Ion Cell with Non-Measurable States," *Computers and Chemical Engineering*, v172, pp. 10822, May 2023. DOI: 10.1016/j.compchemeng.2023.108222

J71. **A. Kandel, S. Park,** S. J. Moura, "Distributionally Robust Surrogate Optimal Control for High-Dimensional Systems," *IEEE Transactions on Control Systems Technology*, v31, n3, May 2023. DOI: 10.1109/TCST.2022.3216988

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C75. **D. Kato**, S. J. Moura, "1D PDE Model for Thermal Dynamics in Fluid-Cooled Battery Packs: Numerical Methods and Sensor Placement," *2021 American Control Conference*. DOI: 10.23919/ACC50511.2021.9483248

C76. **G. Goujard, M. Baoudal**, K. Janin, S. Schwarz, S. J. Moura, "Optimal Siting, Sizing and Bid Scheduling of a Price-Maker Battery on a Nodal Wholesale Market," *2021 American Control Conference*. DOI: 10.23919/ACC50511.2021.9482998

C77. H. Tu, S. J. Moura, H. Fang, "Integrating Electrochemical Modeling with Machine Learning for Lithium-Ion Batteries," *2021 American Control Conference*. DOI: 10.23919/ACC50511.2021.9482997

C78. D. Zhang, L. D. Couto, S. J. Moura, "Observability Analysis for Electrode-Level State Estimation of Lithium-ion Batteries," *2021 American Control Conference*. DOI: 10.23919/ACC50511.2021.9483426

C79. **S. Bae**, D. Isele, K. Fujimura, S. J. Moura, "Risk-Aware Lane Selection on Highway with Dynamic Obstacles," *2021 32nd IEEE Intelligent Vehicles Symposium*. DOI: 10.1109/IV48863.2021.9575610

C80. **P. Keyantuo, L. Dunn**, B. Haydon, C. Vermillion, F. Katopodes Chow, S. J. Moura, "A Vector Auto-Regression Based Forecast of Wind Speeds in Airborne Wind Energy Systems," *2021 5th IEEE Conference on Control Technology and Applications*. DOI: 10.1109/CCTA48906.2021.9659003

C81. B. Haydon, K. Mishra, **P. Keyantuo**, D. Panagou, F. Katopodes Chow, S. J. Moura, C. Vermillion, "Dynamic Coverage Meets Regret: Unifying Two Control Performance Measures for Mobile Agents in Spatiotemporally Varying Environments," *60th IEEE Conference on Decision and Control*, 2021. DOI: 10.1109/CDC45484.2021.9682826

C82. A. Pozzi, S. J. Moura, D. Toti, "A Neural Network-Based Approximation of Model Predictive Control for a Lithium-Ion Battery with Electro-Thermal Dynamics," *IEEE International Conference on Control & Automation*, Naples, Italy, June 2022. DOI: 10.1109/ICCA54724.2022.9831878

C83. **P. Gill**, D. Zhang, L. D. Couto, **C. Dangwal**, S. Benjamin, W. Zeng, S. J. Moura, "State-Of-Health Estimation Pipeline for Li-Ion Battery Packs with Heterogeneous Cells," *2022 American Control Conference*. DOI: 10.23919/ACC53348.2022.9867450

C84. **C. Dangwal**, D. Zhang, L. D. Couto, **P. Gill**, S. Benjamin, W. Zeng, S. J. Moura, "Pack Level State-Of-Power Prediction for Heterogeneous Cells," *2022 American Control Conference*. DOI: 10.23919/ACC53348.2022.9867529

C85. **G. Goujard, P. Keyantuo, M. Badoual**, S. J. Moura, "Exploration vs. Exploitation in Airborne Wind Energy Systems via Information-Directed Sampling Control," *2022 American Control Conference*. DOI: 10.23919/ACC53348.2022.9867381

C86. A. Pozzi, S. J. Moura, D. Toti, "Deep Learning-Based Predictive Control for the Optimal Charging of a Lithium-Ion Battery with Electrochemical Dynamics," *2022 6th IEEE Conference on Control Technology and Applications*, Trieste, Italy, Aug 2022. DOI: 10.1109/CCTA49430.2022.9966149

C87. **Y. Ju**, T. Zeng, Z. Allybokus, S. J. Moura, "Optimal Operation with Robo-Chargers in Plug-In Electric Vehicle Charging Stations," *2023 American Control Conference*.

C88. **R. Wang**, T. Zeng, **P. Keyantuo**, J. Sandoval, A. Vishwanath, H. Borhan, S. J. Moura, "Optimal Dispatch & Routing of Electrified Heavy-Duty Truck Fleets: A Sensitivity Analysis with Fleet Data," *2023 American Control Conference*.

C89. **C. Dangwal, D. Kato**, Z. Huang, **A. Kandel**, S. J. Moura, "Global Sensitivity Analysis of 0-D Lithium Sulfur Electrochemical Model," *IFAC World Congress 2023*.

C90. T. Zeng, S. J. Moura, Z. Zhe, "Joint Mobility and Vehicle-to-Grid Coordination in Rebalancing Shared Mobility-on-Demand Systems," *IFAC World Congress 2023*.

C91. **P. Keyantuo, R. Wang**, T. Zeng, A. Vishwanath, H. Borhan, S. J. Moura, "Distributionally Robust and Data-Driven Solutions to Commercial Vehicle Routing Problems," *IFAC World Congress 2023*.

C92. **J. Shi, D. Kato, S. Jiang, C. Dangwal**, S. J. Moura, "Robust Estimation of State of Charge in Lithium Iron Phosphate Cells Enabled by Online Parameter Estimation and Deep Neural Networks," *Modeling, Estimation and Control Conference 2023*.

C93. M. Borah, S. J. Moura, **D. Kato**, "A nonlinear fractional-order dynamical framework for state of charge estimation of LiFePO4 batteries in electric vehicles," *Modeling, Estimation and Control Conference 2023*.

C94. **G. Goujard, C. Dangwal, P. Gill, D. Kato**, S. J. Moura, "Modeling and State Estimation for Lithium Sulfur Batteries as a Piecewise Affine System," *62nd IEEE Conference on Decision and Control.*

C95. **J. Shi**, **S. Jiang,** U. J. F. Aarsnes, D. Naerheim, S. J. Moura, "Multiple Time Scale Energy Management for a Fuel Cell Ship Propulsion System," *2024 European Control Conference*.

C96. **R. Wang, Y. Ju,** Z. Allybokus, W. Zeng, N. Obrecht, S. J. Moura, "Optimal Sizing, Operation, and Efficiency Evaluation of Battery Swapping Station for Electric Heavy-Duty Trucks," *2024 American Control Conference*. **Energy Systems TC Best Paper Award.**

C97. M. Borah, **S. Jiang, J. Shi**, S. J. Moura, "Nonlinear Fractional Dynamics Integrated Physics-Informed Neural Network Model for LiFePO4 Batteries in electric vehicles," *2024 American Control Conference*.

C98. **S. Jiang, J. Shi**, M. Borah, S. J. Moura, "Weaknesses and Improvements of the Extended Kalman Filter for Battery State-Of-Charge and State-Of-Health Estimation," *2024 American Control Conference*. **ACC Best Student Paper Finalist.**

C99. M. Haas, A. Nemati, S. J. Moura, S. Nazari, "LiFePO4 Battery Thermal Modeling: Bus Bar Thermal Effects," *2024 Modeling, Estimation and Control Conference*.

C100. X. Tang, X. Lin, S. J. Moura, R. de Castro, S. Markolf, S. Feng, Q. Gan, "Enhancing Large-Scale Evacuations of Electric Vehicles through Integration of Mobile Charging Stations," *27th IEEE International Conference on Intelligent Transportation Systems (ITSC)*.

C101. L. Lim, J. Chen, M. Espinoza, S. J. Moura "Investigating Factors Contributing to Autonomous Vehicle Crash Severity Using Machine Learning and Recursive Feature Elimination (RFE)," *Transportation Research Board 2025 Annual Meeting*.

C102. X. Tang, S. Kuang, X. Lin, R. De Castro, Q. Gan, S. J. Moura "Optimization of Electric Vehicle Evacuation Integrating Mobile Charging Stations and Considering Vehicle Diversity," *2025 American Control Conference*.

C103. T. Zhang, Z. Wu, Y. Chen, Y. Wang, B. Liang, S. J. Moura, M. Tomizuka, M. Ding, W. Zhan, "Physics-Aware Robotic Palletization with Online Masking Inference," 2025 IEEE International Conference on Robotics and Automation (ICRA).

Articles in Non-Refereed Magazines or Journals

M1. S. J. Moura and **H. Perez**, "Better Batteries through Electrochemistry and Controls," *ASME Dynamic Systems and Control Magazine*, v 2, n 2, pp. S15-S21, July 2014.

Patents

P1. A. Kumar, N. Singh, S. J. Moura, N. Sankar, "Design and Control of Electric Vehicle Charging Infrastructure," *U.S. Provisional Patent 62/609,403* filed December 22, 2017.

P2. B. Travacca, S. Bae, T. Zeng, S. J. Moura, "Customer-Centric Method and System for Pricing Options and Pricing/Charging Co-Optimization at Multiple Plug-in Electric Vehicle Charging Stations," *U.S. Patent 17/541,510*, filed Dec 3, 2021.

P3. B. Travacca, S. Bae, T. Zeng, S. J. Moura, "Methods and Systems for Optimal Pricing and Charging Control of a Plug-in Electric Vehicle Charging Station," *U.S. Patent 17/112,646*, filed Dec 4, 2020.

P4. D. Zhang, P. Gill, S. Moura, L. Couto, S. Benjamin, W. Zeng, "Interval estimation for state-of-charge and temperature in battery packs with heterogeneous cells," *U.S. Patent 11,215,667*, filed Jun 24, 2020, issued January 4, 2022.

P5. P. Gill, S. J. Moura, C. Dangwal, D. Zhang, L. D. Couto, W. Zeng, B. Sebastien, "State-of-Health Estimation Pipeline for Heterogeneous Li-ion Battery Packs," *U.S. Patent Application 17/832,219*, filed Jun 3, 2022.

P6. C. Dangwal, S. J. Moura, P. Gill, D. Zhang, L. D. Couto, W. Zeng, B. Sebastien, "Pack Level State-of-Power Prediction for Heterogeneous Cells," *U.S. Patent Application 17/832,291*, filed Jun 3, 2022.

P7. P. Keyantuo, R. Wang, S. J. Moura, A. Vishwanathan, H. Borhan, "Connectivity and Machine Learning based Optimization of Freight Delivery Vehicle Fleets," *U.S. Patent Application 63/366,475*, filed Sep 21, 2022.

P8. Y. Ju, T. Zeng, S. J. Moura, Z. Allybokus, "Method and Apparatus for Operating Electric Vehicle Charging Infrastructure," *U.S. Patent Application 18/145,509*, filed Dec 22, 2022.

Dissertations (as Author, Chair, or Primary Advisor)

D1. S. J. Moura, "Plug-in Hybrid Electric Vehicle Power Management: Optimal Control and Battery Sizing," M.S.E. Thesis, Dept of Mechanical Engineering, University of Michigan, Ann Arbor, 2008.

D2. S. J. Moura, "S. J. Moura, "Plug-in Hybrid Electric Vehicle Power Management: Optimal Control and Battery Sizing," Ph.D. Thesis, Dept of Mechanical Engineering, University of Michigan, Ann Arbor, 2011.

D3. H. E. Perez, "Model Based Optimal Control, Estimation, and Validation of Lithium-Ion Batteries," Ph.D. Thesis, Dept of Civil & Environmental Engineering, University of California, Berkeley, 2016.
D4. E. M. Burger, "Building Energy Modeling and Control Methods for Optimization and Renewables Integration," Ph.D. Thesis, Dept of Civil & Environmental Engineering, University of California, Berkeley, 2017.
D5. C. Le Floch, "Methods for Optimal Charging of Large Fleets of Electric Vehicles," Ph.D. Thesis, Dept of Civil & Environmental Engineering, University of California, Berkeley, 2017.
D6. E. Munsing, "Optimization Tools for Constrained Energy Markets," Ph.D. Thesis, Dept of Civil & Environmental Engineering, University of California, Berkeley, 2018.
D7. H. Zhang, "Planning and Operation of Plug-in Electric Vehicle Charging Infrastructure Considering Transportation Network Constraints," Ph.D. Thesis, Dept of Electrical Engineering, Tsinghua University, 2017.
D8. Z. T. Gima, "Parameter Estimation in Electrochemical Li-ion Battery Models," Ph.D. Thesis, Dept of Civil & Environmental Engineering, University of California, Berkeley, 2020.
D9. D. Zhang, "Model-based Online State and Parameter Estimation for Lithium-ion Battery Management Systems," Ph.D. Thesis, Dept of Civil & Environmental Engineering, University of California, Berkeley, 2020.
D10. L. N. Dunn, "Data-Driven Decision Analysis in Electric Power Systems," Ph.D. Thesis, Dept of Civil & Environmental Engineering, University of California, Berkeley, 2020.
D11. S. Park, "Techniques for Battery Management: Modeling, Estimation, Learning & Controls," Ph.D. Thesis, Dept of Civil & Environmental Engineering, University of California, Berkeley, 2020.
D12. S. Bae, "Optimization and Control in Smart Cities: Mobility, Electrification, and Behavior," Ph.D. Thesis, Dept of Civil & Environmental Engineering, University of California, Berkeley, 2020.
D13. Y. Zhao, "Deployment of Electric Vehicle Charging Facilities From the Perspective of Private Investors," Dept of Electrical Engineering, Tsinghua-Berkeley Shenzhen Institute, 2021.
D14. B. Travacca, "Optimization Models and Methods for Large Scale and Complex Systems, with applications to distributed electricity resources integration," Ph.D. Thesis, Dept of Civil & Environmental Engineering, University of California, Berkeley, 2021.
D15. M. Badoual, "Renewable Energy and Flexibility Integration on the Electricity Market," Ph.D. Thesis, Dept of Civil & Environmental Engineering, University of California, Berkeley, 2021.
D16. S. Woo, "Electrification and Automation of Mobility Infrastructure: Unintended Consequences and their Solutions via Connectivity, Modeling, and Control," Ph.D. Thesis, Dept of Civil & Environmental Engineering, University of California, Berkeley, 2021.
D17. I. Kavvada, "Optimal regional earthquake risk mitigation planning for the building infrastructure," Ph.D. Thesis, Dept of Civil & Environmental Engineering, University of California, Berkeley, 2022.
D18. T. Zeng, "Charging Infrastructure, Network and Urban Mobility," Ph.D. Thesis, Dept of Civil & Environmental Engineering, University of California, Berkeley, 2022.
D19. D. Vlachgiannis, "Human-centric Traffic Signal Optimization: Large Scale Location Inference and Reinforcement Learning Control Algorithms," Ph.D. Thesis, Dept of Civil & Environmental Engineering, University of California, Berkeley, 2022.
D20. J. Porzio, "Evaluating the Private and External Costs and Benefits of Select Large-Scale Li-ion Battery Energy Storage Applications," Ph.D. Thesis, Dept of Civil & Environmental Engineering, University of California, 2024.

Invited Talks (last updated June 2023)

Total since arriving at UC Berkeley: >100 in total

- MATHIAS Days 2023 Oct 2023
- CPS-IoT Week 2023 | Workshop on "Bridging Learning and Algorithmic Fairness in the Operation of Urban Infrastructure and Network Systems (AFL)" May 2023
- Society of Women Engineers | High School Engineering Program Mar 2023
- SAE China | Automotive Innovation Workshop Feb 2023
- University of Minnesota | Warren Lecture in Civil, Env, Geo-Engineering Nov 2022
- Penn State University | Mechanical & Nuclear Engineering Oct 2022
- CalSTA Autonomous Vehicles Strategic Framework Workshop with Labor Sep 2022
- Gordon Research Conference: Batteries Jun 2022
- ACC Workshop on "Introductory Workshop on Battery Modeling and Controls" Jun 2022
- Lawrence Berkeley Lab | Energy Technologies Area Jun 2022
- Battery Brunch Apr 2022
- Internationalisation for Autonomous Driving actors Jan 2022
- CDC Workshop on "Control for Autonomous Cities" Dec 2021
- ITSC Workshop on "Autonomous, Connected and Electrified Mobility Systems: Modeling, Control, and Deployment" Sep 2021
- California Energy Commission Charging Infrastructure Modeling Summit II Sep 2021
- C3.ai DTI | ML for a Resilient, Secure, Carbon-Free Electricity Supply Jun 2021
- Princeton-UCSB Workshop on Modern Power Grids Jun 2021
- Penn State Energy Days 2021 May 2021
- Coffee Chat with the Berkeley Engineering Dean Apr 2021
- Apple Apr 2021
- MIT | Pierce Laboratory for Infrastructure Science and Engineering Mar 2021
- 2020 Virtual INFORMS Annual Meeting Nov 2020
- University of Colorado, Boulder | Renewable and Sustainable Energy Institute Nov 2020
- NextProf Nexus 2020 | Virtual Sep 2020
- General Motors Sep 2020
- Columbia University | Columbia Electrochemical Energy Center July 2020
- Oxford Battery Modeling Symposium (Virtual Conference due to COVID) Mar 2020
- West Bengal Transport Corporation, Kolkata, India | Workshop on Electric Mobility Mar 2020
- Gordon Research Conference: Batteries Feb 2020
- UCLA | MAE Seminar Dec 2019
- IEEE Conf. on Decision & Control | Workshop on Smart Society & CPHS Dec 2019
- NextProf Nexus | Georgia Tech Oct 2019
- Georgia Tech | Decision and Control Laboratory Seminar Oct 2019
- University of California, Davis | MAE Seminar May 2019
- University of California, Santa Cruz | Cyber-Physical Systems Research Center Jan 2019
- Stem Inc. Jan 2019
- LANL Grid Science Winter School & Conference | TC on Smart Grids Jan 2019
- "Smart Buildings: A Status Quo Check" Workshop | IEEE CDC Dec 2018
- IEEE Conference on Decision and Control | TC on Smart Grids Dec 2018
- Université Libre de Bruxelles (ULB) Dec 2018
- Americas International Meeting on Electrochemistry and Solid State Science Oct 2018
- ASME Dynamic Systems and Control Conf | Workshop on CAVs Oct 2018
- University of Michigan, Ann Arbor Sep 2018
- École Polytechnique | Center for Applied Mathematics (CMAP) Sep 2018

- Université Libre de Bruxelles (ULB) Sep 2018
- University of Oxford | Dept. of Engineering Science June 2018
- University of Warwick | Institute of Mathematics & Warwick Manufacturing Group June 2018
- University of Washington | Chemical Engineering Dept. Apr 2018
- Rensselaer Polytechnic Institute | Mechanical, Aerospace, Nuclear Eng. Mar 2018
- University of California, Irvine | Mechanical & Aerospace Engineering Feb 2018
- Institut Henri Poincaré | The Mathematics of Energy Jan 2018
- EDF Lab Paris-Saclay Jan 2018
- MINES ParisTech | Centre Automatique et Systèmes (CAS) Jan 2018
- Clemson University | Automotive Engineering Dept. Dec 2017
- NYU Abu Dhabi | Abu Dhabi, United Arab Emirates Nov 2017
- Stanford University | Energy Resources Engineering Dept. Oct 2017
- Carnegie Mellon University | Civil & Environmental Engineering Dept. Sep 2017
- Nuclear Engineering Colloquium | UC Berkeley Sep 2017
- Global Artificial Intelligence and Robotic Summit | Shenzhen, China Jul 2017
- Shanghai Jiaotong University | School of Mechanical Engineering Jun 2017
- Stanford University | Smart Grid Seminar May 2017
- University of Southern California | Electrical Engineering Dept. Mar 2017
- University of Electronics Science & Tech of China (UESTC) | Chengdu, China Jan 2017
- Xihua University | Chengdu, China Jan 2017
- FISITA World Automotive Congress | Busan, South Korea Sep 2016
- Korea Advanced Institute of Science & Tech. (KAIST) | Daejeon, South Korea Sep 2016
- Sogang University | Seoul, South Korea Sep 2016
- Tsinghua-Berkeley Shenzhen Institute | Shenzhen, China Jun 2016
- National University of Singapore | Singapore Apr 2016
- IBM Research Collaboratory | Singapore Apr 2016
- NYU Abu Dhabi | Abu Dhabi, United Arab Emirates Mar 2016
- Center for the Built Environment | UC Berkeley Oct 2015
- NSF Workshop on "Developing Intelligent Food, Energy, and Water Systems" Sep 2015
- Bosch LLC, Research and Technology Center | Palo Alto, CA Jul 2015
- Energy Technologies Area | Lawrence Berkeley National Lab Mar 2015
- Energy Resources Group Colloquium | UC Berkeley Mar 2015
- OhmConnect | San Francisco, CA Mar 2015
- American Control Conference Tutorial Session on Reference Governors Jun 2014
- Los Alamos National Laboratory May 2014
- Cymer | San Diego, CA May 2014
- NEC Laboratories North America | Cupertino, CA Apr 2014
- Environmental Energy Technologies Division | Lawrence Berkeley National Lab Dec 2013
- i^{4}Energy | UC Berkeley Nov 2013
- UC Berkeley Institute of Transportation Studies | UC Berkeley Sep 2013
- Zhejiang University | Hangzhou, China Aug 2013
- International Workshop on Smart City | Hangzhou, China Aug 2013
- New Energy Vehicle Dynamic System and Control Workshop | Beijing, China Aug 2013
- Chalmers University of Technology | Gothenburg, Sweden May 2013
- Aalborg University | Aalborg, Denmark May 2013
- MINES ParisTech | Paris, France May 2013

- Carnegie Mellon University Mar 2013
- University of Michigan Feb 2013
- University of California, Davis Feb 2013
- University of California, Berkeley Feb 2013
- University of California, Santa Barbara Jan 2013
- Nest Labs | Palo Alto, CA Jan 2013
- Ohio State University Nov 2012
- University of California, Los Angeles Nov 2012
- ASME Dynamic Systems and Control Conference Semi-Plenary Oct 2012
- University of California, San Diego Oct 2012
- University of Washington Apr 2012
- Princeton University Mar 2012
- Bosch LLC, Research and Technology Center | Palo Alto, CA Jan 2012
- Tesla Motors | Palo Alto, CA Mar 2011
- University of Illinois, Urbana-Champaign Feb 2011
- California Institute of Technology Jan 2011
- Ford Motor Company | Dearborn, MI Dec 2010
- Colorado State University Dec 2010
- Syracuse University Nov 2010

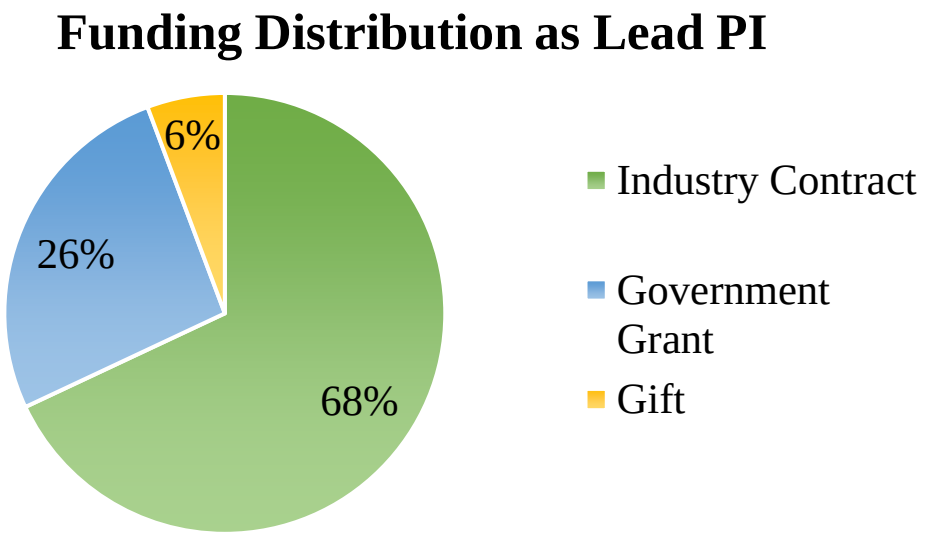
Funding (*last updated in June 2023)

Funding Agency	Performance Period	My Role	UCB Budget	Project Title
BMW. Prime: Berkeley DeepDrive	Jan 27 2023 - Jan 26 2024	Single PI	$104,000	AI Control of Cell Level Inverter in EV Powertrain
CITRIS Seed Funding	Jan 1 2023 - Dec 31 2023	Co-PI	$20,000	Battery Health Degradation for Electric Off-road Vehicles
NORCE Norwegian Research Center AS	Sep 15 2022 - Jun 20 2025	Single PI	$143,779	Energy efficient operation of hydrogen powered vessels (HyEff)
CITRIS Seed Funding	Jan 1 2022 - Dec 31 2022	Co-PI	$20,000	Developing Resilient Materials and Sensors for Improved Building Performance
UC Berkeley ITS - SB1	Aug 1 2021 - Aug 16 2022	Single PI	$80,000	EEZ Mobility: A Tool for Modeling Equitable Electrification of Zero-emissions Mobility
Thermo Fisher Scientific. Prime: UC Riverside	Jun 15 2021 - Jun 30 2025	Lead PI	$2,500	University of California Alliance for Minority Participation (CAMP) and Thermo Fisher Scientific partnership to support undergraduate STEM student-faculty mentored research
U.S. Dept. of Energy. Prime: Cummins Inc	Oct 1 2020 - Dec 31 2023	Single PI	$300,001	Connected and Learning Based Freight Operation for Efficiency

Tsinghua University Education Foundation	Mar 1 2020 - Jul 31 2021	Core PI	$106,667	Tsinghua-Berkeley Shenzhen Institute – Year 4 (&5)
Tsinghua University Education Foundation	Aug 1, 2018 – Jul 31 2020	Core PI	$73,333	Tsinghua-Berkeley Shenzhen Institute – Year 3
CITRIS COVID	May 15 2020 - May 14 2021	Lead PI	$50,000	A Data Scientific Approach to Coronavirus Surveillance: Application to Re-Opening UC Campuses
National Science Foundation	Apr 15 2020 – Apr 14 2022	Co-PI	$104,940	SBIR Phase II: Intelligent Planning and Control Software for EV Charging Infrastructure
Total S.A. / Saft Batteries	May 15 2020 - May 14 2021	Single PI	$144,875	State-of-X Estimation in Battery Packs with Heterogeneous Cells
Total S.A.	Jan 6 2020 – Nov 15 2024	Single PI	$535,232	Design of EV Fleets and Charging Infrastructure
Enel X North America	Unrestricted gift	Single PI	$10,000	In support of CE 295
Allison Transmission	Unrestricted gift	Single PI	$10,000	In support of CE 295
Leslee & Michael Perlstein	Unrestricted gift	Single PI	$7,250	In support of CE 186
Enel Foundation via CITRIS	Sep 30, 2019 – Sep 29, 2020	Single PI	$50,000	Tools for Electric Bus Planning & Operation
Total S.A. / Saft Batteries	May 15 2019 – Apr 30 2020	Single PI	$130,400	State-of-Charge / State-of-Health Estimation in Battery Packs with Heterogeneous Cells
CITRIS Seed Funding	May 1, 2019 – June 30, 2020	Co-PI	$30,000	Multi-Hazard Risk Analysis to Inform Distribution Grid Upgrades for Reliability and Resilience
National Science Foundation	Mar 1, 2019 – Feb 29, 2024	Single PI	$531,177	CAREER: Estimation and Control of Electrochemical-Thermal Battery Models: Theory and Experiments
Leslee & Michael Perlstein	Unrestricted gift	Single PI	$5,000	In support of CE 186
Total S.A.	Aug 1, 2018 – July 31, 2020	Single PI	$100,000	Research in the Field of Electric Vehicle Charging Stations
Total S.A.	Aug 1, 2018 – July 31, 2020	Single PI	$299,814	Research in the Field of Electric Vehicle Charging Stations
Tsinghua University Education Foundation	Aug 1, 2018 – Jul 31 2019	Core PI	$66,666	Tsinghua-Berkeley Shenzhen Institute – Year 3

LG Chem	Feb 1, 2018 – Jul 14, 2020	Single PI	$300,000	Rapid-Safe Battery Charging: Controls & Learning with Electrochemical Models
National Science Foundation	Jan 1, 2018 – Dec 31, 2018	Co-PI	$104,327	STTR: Phase 1: Intelligent Planning & Control Software for EV Charging Infrastructure
Bosch RTC	Jan 1, 2018 – Dec 31, 2018	Single PI	$114,953	Optimal Experiment Design of Lithium Ion Battery Model Parameter Identification - Year 2
National Science Foundation	Sep 15, 2017 – Aug 31, 2020	Co-PI	$235,000	Collaborative Research: Multi-Scale, Multi-Rate Spatio-Temporal Optimal Control with Application to Airborne Wind Energy Systems
National Science Foundation	Aug 15, 2017 – Jul 31, 2020	Team Member	$828,428	INFEWS/T1: Reducing the Environmental Impacts of FEW Systems In and Around Cities
Advanced Research Projects Agency – Energy (ARPA-E)	Mar 3, 2017 – Apr 2, 2024	Co-PI	$6,804,581	Predictive Data-Driven Vehicle Dynamics and Powertrain Control
Total Energies E&P Research & Technology USA, LLC	Aug 1, 2016 – Oct 31, 2024	Single PI	$2,070,268	Optimal Energy Management for Solar Communities
Bosch RTC	Jul 1, 2016 – Jun 30, 2017	Single PI	$95,252	Optimal Experiment Design of Lithium Ion Battery Model Parameter Identification
California Energy Commission	May 1, 2016 – Mar 1, 2018	Team Member	$2,270,000	The Oakland EcoBlock - A ZNE, Low Water Use Retrofit Neighborhood Demonstration Project
California Energy Commission	Feb 1, 2016 – Jan 31, 2019	Co-PI	$1,590,000	An Open Source, Open Architecture Platform for Plug-in Electric Vehicle Smart Charging in California Residential and Commercial Settings
Siebel Energy Institute	Sep 1, 2015 – Feb 28, 2016	Lead PI	$50,000	Understanding the Impact of Electric Vehicle Charging on the Power Grid: An Urban Mobility Perspective
Siebel Energy Institute	Sep 1, 2015 – Feb 28, 2016	Lead PI	$25,000	Data-Driven Techniques for Assessing Current and Future Grid Reliability
Jacobs Institute for Design Innovation	Jan 1, 2015 – Dec 31, 2015	Lead PI	$7,000	CE 186 – Design of Cyber Physical Systems (Course Development)

Samsung Global Research Outreach (GRO)	Aug 13, 2015 – Aug 12, 2016	Single PI	$100,000	ElectroChemical model-based Control (ECC) of Li-ion Batteries
National Science Foundation	Aug 1, 2014 – July 31, 2017	Single PI	$294,714	Fast Charging Batteries via Electrochemical Model-based Control
France Berkeley Fund	June 1, 2014 – Nov 30, 2015	Lead PI	$10,000	Analysis and Control of Grid-Integrated Plug-in Electric Vehicle Fleets
CITRIS Seed Funding	Jun 1, 2014 – Aug 30, 2015	Co-Lead PI w/ J.W. Park (UCD)	$30,000	Model Predictive Control of PV-ES System utilizing Second Life Lithium Battery
California Energy Commission	May 15, 2013 – Feb 20, 2014	Lead PI	$95,000	Estimation of Thermostatically Controlled Loads for Demand Response
SUMMARY				
Total as Lead PI	5,726,215 USD			
Total	17,950,157 USD | $1.795M per year over 10 yrs (CEE is 782k per FTE)			



Teaching (*last updated in June 2023)

Courses Taught at UC Berkeley during Academic Year

- Design of Future Infrastructure Systems (CE 92A) | F20, S22
- Civil & Environmental Engineering Systems Analysis (CE 191) | F13, F14
- Design of Cyber-Physical Systems / Design of IoT for Smart Cities (CE 186) | F15, F16, F17, F18, F19, S22, S23
- Electric Mobility Engineering (CE 190 / DESINV 190) | F20, F21, F22
- Energy Systems and Control (CE 295) | S14, S15, S16, S17, S18, S19, S20

UCB Student Course Evaluation Survey Results (Average Scores over 19 semesters)

	My Score (out of 7)	*Dept. Avg. (out of 7)*	
Teaching Effectiveness, Course Worth, Assignments, & Classroom Environment	6.32	5.87	+7.71% better than dept. avg
Avg Course Enrollment	56.84		

Summer Courses & Enrollment

Course (Program)	*2016*	*2017*	*2018*	*2019*	*2020*	*2021*	*2022*	*2023*
Renewable Energy Systems and Control (TBSI)	8	12	7					
Intro to Reinforcement Learning (TBSI)				6	9			
Maker Design Studio (PREP/TPREP)		60	120	120	180	180	180	120

Student Researcher Mentoring

Hyperlinks connect to LinkedIn accounts

Ph.D. Students (Former)

1. Dr. Hector PEREZ
2. Dr. Eric BURGER
3. Dr. Caroline LE FLOCH
4. Dr. Eric MUNSING
5. Dr. Hongcai ZHANG (Tsinghua University)
6. Dr. Zach GIMA
7. Dr. Dong ZHANG
8. Dr. Laurel DUNN
9. Dr. Saehong PARK
10. Dr. Sangjae BAE
11. Dr. Yiqi ZHAO (TBSI)
12. Dr. Bertrand TRAVACCA
13. Dr. Mathilde BADOUAL
14. Dr. Soomin WOO
15. Dr. Ioanna KAVVADA
16. Dr. Teng ZENG
17. Dr. Dimitris VLACHOGIANNIS
18. Dr. Dylan KATO
19. Dr. Aaron KANDEL
20. Dr. Guillaume GOUJARD
21. Dr. Chitra DANGWAL

Ph.D. Students (Current)

22. Patrick KEYANTUO
23. Jason PORZIO
24. Preet GILL
25. Ayse Tugba OZTURK
26. Ruiting WANG
27. Joyce CHEN
28. Yi JU
29. Junzhe SHI
30. Shida JIANG

Postdoctoral Scholars (Former)

1. Dr. Azad GHAFFARI (UC San Diego, PhD)
2. Dr. Xiaosong HU (Beijing Institute of Tech., PhD)
3. Dr. Satadru DEY (Clemson University, PhD)
4. Dr. Chao SUN (Beijing Institute of Tech., PhD)
5. Dr. Hector PEREZ (UC Berkeley, PhD)
6. Dr. Hongcai ZHANG (Tsinghua University, PhD)
7. Dr. Milad MEMARZADEH (Carnegie Mellon Univ., PhD)
8. Dr. Saehong PARK (UC Berkeley, PhD)
9. Dr. Zhijia Huang (Tsinghua-Berkeley Shenzhen Institute, PhD)
10. Dr. Soomin WOO (UC Berkeley, PhD)

Postdoctoral Scholars (Current)

- none

Visiting Scholars / Student Researchers (Current)

- Dr. Manashita BORAH (Tezpur University)

Visiting Scholars / Student Researchers (Former)

- Zhijia HUANG (TBSI), Andrea POZZI (Università Degli di Pavia), Jing YU (TBSI), Yiqi ZHAO (TBSI), Zhe ZHOU (TBSI), Luis COUTO (Université Libre de Bruxelles), Leobardo CAMACHO (UC San Diego), Ji LIU (TBSI), Hongcai ZHANG (Tsinghua University), Chao SUN (Beijing Institute of Technology), Changfu ZOU (University of Melbourne), Shirin YOUSEFIZADEH (Aalborg University), Tianyu YANG (Tsinghua University), Pierre-François MASSIANI (MINES ParisTech), Florent DI MEGLIO (MINES ParisTech), Léa NICOLAS (Ecole Polytechnique), Paul H. T. KAMGA (MINES ParisTech), Khajak Geukjian (American University of Beirut), Ibrahim YOUSSEF (American University of Beirut), Florian PAPION (Ecole Polytechnique)

M.S./MEng. Student

- (AY2022-23) Seungyun LEE, Joey CAI, Yifei XU, Darya DARVISH, Jarvis YUAN, Eva SABINE
- (AY2021-22) Maya BRUGUERA, Callie CLARK, Deniz AKYAR, Pablo del CUVILLO, Ritwik JHA, Antoine RENAUD, Jaewoong LEE
- (AY2020-21) German PEREA LOPEZ
- (AY2019-20) Pedro ERRARUIZ, Sihan LIU, Yan XIAO, Jonathan KESTELMAN, Upadhi VIJAY, Katie LEE
- (AY2018-19) Armando DOMINGOS, Mathieu MEEUS
- (AY2017-18) Raja SELVAKUMAR, Ramon CRESPO
- (AY2016-17) Jonathan RICHARDS
- (AY2015-15) Zoltan DEWITT, Matthew ROESCHKE
- (AY2014-15) Anne-Perrine AVRIN

B.S. Student

- (AY2022-23) Aboli DATEY, Alessia Kelsey LEVANTE, Ali AL-MOMEN, Matthew MANGIAMELI, Aidan KIM, Ryan ZHAO, Anthony SHAFIK, Julian LICHTENFELD, Sunay DAGLI, Kamal BAINS
- (AY2021-22) Kai JIN, Deep DAYARAMANI, Naveen BAHADUR, Rishi WADGAONKAR, Carson PAIVA, Nathan CARLOS, Sage QUINN, Alex PULOPOT
- (AY2020-21) Akshat JAIN, Tengis DASHMUNKH, Abdulah AL-ZANDANI, Juan Pablo BORGNINO, Jose DE CASAS, Natalie FEDEROVA, Arie CHEN, Trung NOC PHAN, Henry HAO, Tanwei CHEN
- (AY2019-20) Sonia MARTIN, Vanessa HERNANDEZ-CRUZ, German PEREZ LOPEZ, Deep DAYARAMNI, Eric ZHONG
- (AY2018-19) Emily YOU, Jaewoong LEE, Saba SAHEBJAM-ATABAKI
- (AY2017-18) Karl WALTER, Teng Zeng, Michael Whitmeyer, Eleanor FIRESTEIN, Johnny WU
- (AY2016-17) Anushri KUMAR, Justin LUKE, Dylan KATO, Elizabeth CHU, Matthew KOZUCH, Yuting WANG, Zane LIU, Sui CHEUNG CHING

- (AY2015-16) Preet GILL
- (AY2014-15) Niloofar SHAHMOHAMMAD, Defne GUN, Alberto CUCCA
- (AY2013-14) Stephen MOORE, Sam ROUNDS, Othmane BENKIRANE, Loan Kim PHAN

Summary Statistics

	Currently	***Total***
PhD	13	30
Postdoc	0	10
Visiting PhD	1	20
Masters	6	28
BS	10	57
TOTAL	30	145
Women	9	39
Black/LatinX	1	15

Society Memberships

American Society of Mechanical Engineers (ASME)

Energy Systems Technical Committee, DSCD (2012 – present)
Chair (2020 – 2022)
Vice-Char (2018 – 2020)
Secretary (2016-2018)
Publicity (2014-2016)
Member (2012 – present)
Student Member, Dynamic Systems and Control Division (DSCD) (2002 – 2011)

Institute of Electrical and Electronics Engineers (IEEE)

Technical Committee on Smart Cities, CSS (2014 – present)
Technical Committee on Smart Grids, CSS (2013 – present)
Technical Committee on Automotive Controls, CSS (2012 – 2014)
Student Member, Control Systems Society (2008 – present)

Society of Hispanic Professional Engineers (SHPE)

University of Michigan, Student Chapter (2006 – 2011)
UC Berkeley Hispanic Engineers & Scientists, Student Chapter (2002 - 2006)
Administrative Vice-President (2004-2006)

Conference Committee Service

- Program Committee, 2014 American Control Conference in Portland, OR USA
- Program Committee, 2017 ACM BuildSys in Delft, Netherlands
- Program Committee, 2020 American Control Conference in Denver, CO USA
- O. Hugo Schuck Best Paper Award Committee, 2022 Amer. Control Conf. in Atlanta, GA USA
- Co-Chair, 2022 Vehicle Power and Propulsion Conference in Merced, CA USA

Invited/Special/Tutorial Sessions Organized at Conferences

- "Energy Systems Modeling and Estimation" (Invited Session, ACC14), Organizer
- "Energy Systems Optimization" (Invited, ACC14), Co-Chair
- "Energy Storage in Transportation Applications: Modeling and Identification of Li-ion Batteries" (Invited, DSCC14), Chair
- "Energy Storage: Grid Applications" (Invited, DSCC14), Chair
- "The Future of Battery Controls" (Special, ACC15), Chair

- "Battery Management Systems" (Invited, DSCC15), Chair
- "Battery Modeling for Control and Estimation Problems" (Tutorial, CDC15), Co-Chair
- "Control Strategies for Renewable Energy Integration into the Smart Grid: Wind Applications" (Invited, ACC16), Co-Chair
- "Control Strategies for Renewable Energy Integration into the Smart Grid: Distribution Systems and Microgrids" (Invited, ACC16), Co-Chair
- "Battery and Oil & Gas Systems," (Invited, DSCC16), Co-Chair
- "Electrochemical Modeling and Diagnostics of Li-ion Batteries" (Invited, ACC17), Co-Chair
- "Estimation and Control of Batteries" (Invited, ACC18), Co-Chair
- "Control, Optimization, and Diagnostics of Energy Storage Systems" (Invited, ACC19), Co-Chair
- "Estimation and Identification of Energy Storage Systems" (Invited, ACC19), Co-Chair
- "A Tutorial on Battery Systems and Control" (Tutorial, ACC19), Co-Chair
- "Renewable and Smart Energy Systems" (Invited, DSCC19), Co-Chair
- "Modeling and Identification of Energy Storage Systems" (Invited, ACC20), Co-Chair
- "Estimation and Diagnostics of Batteries" (Invited, ACC20), Co-Chair
- "Control and Estimation of Batteries" (Invited, ACC20), Co-Chair
- "Autonomous Energy Systems: Estimation, Modeling, and Control" (Invited, ACC20), Co-Chair
- "Energy Storage Systems" (Invited, DSCC20), Co-Chair
- "Modeling, Identification, and Control of Batteries" (MECC21), Co-Chair
- "Introductory Workshop on Battery Modeling and Controls" (ACC22), Workshop Co-Organizer

Academic Service

Editorial Boards

- IEEE Transactions on Vehicular Technology Special Issue, 2023
- Environmental Research: Infrastructure and Sustainability, 2021-present
- ASME Journal of Dynamical Systems Measurement and Control, 2019-2022
- SAE International Journal of Connected and Automated Vehicles, 2017-2018

CEE Department

- AY2023-24
    - Strategic Planning Committee
    - SYS Admissions Officer
    - Systems Program Graduate Advisor
    - ECIC Program Graduate Advisor
- AY2022-23
    - Taskforce on Environmental Engineering Major
    - SYS-MEng Admissions Officer
    - Systems Program Graduate Advisor
    - ECIC Program Graduate Advisor
- AY2021-22
    - SYS-MEng Admissions Officer
    - Systems Program Graduate Advisor
    - ECIC Program Graduate Advisor
- AY2020-21* (Sabbatical during Spring 2021)
    - Faculty Search Chair, "Climate Equity & Environmental Justice (CEEJ)"

    - Systems Program Lead
    - Systems Program Graduate Advisor
    - ECIC Program Graduate Advisor
- AY2019-20
    - Strategic Planning Committee
    - Systems Program Lead
    - Systems Program Graduate Advisor
    - ECIC Program Graduate Advisor
- AY2018-19
    - Faculty Search Committee "Future Infrastructure Systems"
    - Graduate Studies Committee (F18 only)
    - Systems Program Graduate Advisor
    - ECIC Program Graduate Advisor
- AY2017-18
    - ECIC Admissions Officer
    - SYS Admissions Officer
    - Systems Program Graduate Advisor
    - ECIC Program Graduate Advisor
- AY2016-17
    - ECIC Admissions Officer
    - Systems Program Graduate Advisor
    - ECIC Program Graduate Advisor
- AY2015-16
    - ECIC Admissions Officer
    - Systems Program Graduate Advisor
    - ECIC Program Graduate Advisor
- AY2014-15
    - Faculty Search Committee "Engineering for Sustainability,"
    - Systems Program Graduate Advisor
    - ECIC Program Graduate Advisor
- AY2013-14
    - Curriculum Committee, 2013 – 2014
    - Equity and Inclusion Committee, 2014 – 2015
    - Systems Program Graduate Advisor
    - ECIC Program Graduate Advisor

College of Engineering / UC Berkeley Campus

- AY2022-23
    - Chair of Engineering Science
    - Energy Engineering Faculty Advisor
    - Co-PI of NSF California Alliances for Minority Participation (CAMP)
    - Search Committee, Director of Jacobs Institute for Design Innovation
    - Jacobs Institute for Design Innovation Director's Council
    - COE Undergraduate Studies Committee
- AY2021-22
    - Chair of Engineering Science
    - Energy Engineering Faculty Advisor
    - COE Undergraduate Studies Committee

    - Co-PI of NSF California Alliances for Minority Participation (CAMP)
    - COE Moffett Field Taskforce
    - Jacobs Institute for Design Innovation Director's Council
- AY2020-21* (Sabbatical during Spring 2021)
    - Energy Engineering Faculty Advisor
    - Tsinghua-Berkeley-Shenzhen Institute (TBSI) Core-PI
    - Jacobs Institute for Design Innovation Director's Council
- AY2019-20
    - Energy Engineering Faculty Advisor
    - Tsinghua-Berkeley-Shenzhen Institute (TBSI) Core-PI
    - Jacobs Institute for Design Innovation Director's Council
- AY2018-19
    - Energy Engineering Faculty Advisor
    - COE Data Science Taskforce
    - Tsinghua-Berkeley-Shenzhen Institute (TBSI) Core-PI
    - Jacobs Institute for Design Innovation Director's Council
- AY2017-18
    - Energy Engineering Faculty Advisor
    - Tsinghua-Berkeley-Shenzhen Institute (TBSI) Core-PI
    - Jacobs Institute for Design Innovation Director's Council
    - ITS Strategic Planning Committee
- AY2016-17
    - Energy Engineering Faculty Advisor
    - Tsinghua-Berkeley-Shenzhen Institute (TBSI) Core-PI
    - Jacobs Institute for Design Innovation Director's Council
- AY2015-16
    - Energy Engineering Faculty Advisor
    - Tsinghua-Berkeley-Shenzhen Institute (TBSI) Core-PI
- AY2014-15
    - Committee on Undergraduate Scholarships, Honors, and Financial Aid
- AY2013-14
    - none

Technical Advisory Boards

- WattTime, 2022 – present
- Enviome Research Pvt Ltd, 2020 – present
- Zitara, 2020 – present
- Microgrid Labs, 2018 - present
- eCalCharge, 2016 – 2020
- eLum, 2015 – present
- CEC Project: "Demonstration of Community Scale Low Cost Highly Efficient PV and Energy Management System," lead by UC Davis, 2015 – 2018

Reviewer

- **Funding Agencies:** National Science Foundation (NSF); Croatian Science Foundation (CSF); Nebraska Research Initiative (NRI); Kansas NSF EPSCoR; A*STAR Singapore; Samsung
- **Publishers:** Springer, Wiley & Sons, Cambridge University Press

- **Journals:**
  - **Systems & Controls:** ASME Journal of Dynamics Systems, Measurement, and Control; Automatica; European Journal of Control; Control Engineering Practice; IEEE Transactions on Automatic Control; IEEE Trans. on Control Systems Technology; IEEE/ASME Trans. on Mechatronics; IEEE Letters – Control Systems Society; International Journal of Control; Journal of Robust & Nonlinear Control; Sensors; Simulation Modeling Practice and Theory; Systems & Control Letters
  - **Power & Energy:** Applied Energy; Energies; IEEE Trans. on Industrial Electronics; IEEE Trans. on Power Systems; IEEE Trans. on the Smart Grid; IEEE Trans. on Sustainable Energy; IEEE Trans. on Vehicular Technology; International Journal of Electrical Power & Energy Systems; Journal of Energy Storage; Journal of Power Sources
  - **Transportation:** IEEE Trans. on Intelligent Transportation Systems; IEEE Trans. on Transportation Electrification; IET Intelligent Transport Systems; International Journal of Powertrains; Transportation Research – Parts C & D
  - **Electrochemistry & Materials:** Electrochimica Acta; Energy Storage Materials; Journal of the Electrochemical Society; Journal of Fluids and Structures; Science Advances
  - **Broad & Interdisciplinary:** Nature Energy; Proceedings of the IEEE; Proceedings of the National Academy of Sciences

Appointments and Experience

University of California, Berkeley

PATH Faculty Director	Jan 2022 - present
Chair of Engineering Science	Jul 2021 - present
Clare and Hsieh Wen Shen Endowed Distinguished Professorship	Jul 2020 – Jun 2025
Associate Professor, Director of eCAL	Jul 2019 – present
Assistant Professor, Director of eCAL	Jul 2013 – Jun 2019

MINES ParisTech – Paris, France — Mar 2013 – Jun 2013
Visiting Researcher

University of California, San Diego — Jul 2011 – Jun 2013
UC President's Postdoctoral Fellow

University of Michigan – Ann Arbor, Michigan — Aug 2006 – Apr 2011
Graduate Student Research Assistant

DaimlerChrysler Corporation – Detroit, Michigan — May 2006 - Aug 2006
Summer Intern, Electrical Engineering - Vehicle Engineering

Ford Motor Company - Dearborn, Michigan — May 2005 - Aug 2005
Summer Intern, Manufacturing & Quality

Southern California Edison - Rosemead, California — Jun 2004 - Aug 2004
Professional Aide, Staff Engineering

BIS Computer Solutions, Inc. - La Crescenta, California — Jun 2003 - Jul 2003
Sales Assistant, Computer Technician