BOYA HOU

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https://boyahou.github.io/

EDUCATION

University of Illinois, Urbana-Champaign 2024 (expected)
PhD student in Electrical and Computer Engineering GPA: 3.97/4.00
Advisor: Subhonmesh Bose
Committee: Tamer Basar, Subhonmesh Bose, Maxim Raginsky, Rayadurgam Srikant, Umesh Vaidya

University of Illinois, Urbana-Champaign 2019
Master of Engineering in Electrical and Computer Engineering GPA: 3.93/4.00

Zhejiang University 2019
Bachelor of Engineering in Electrical Engineering GPA: 3.89/4.00

RESEARCH INTERESTS

My research interests lie in the area of autonomy. I draw on tools from applied mathematics, machine learning, and control theory to develop efficient data-driven algorithms for decision-making in uncertain environments with theoretical guarantees, with a focus on applications to electric power grids and electrified transportation.

PUBLICATIONS

- **B. Hou**, S. Sanjari, N. Dahlin, S. Bose, U. Vaidya, "Sparse Learning of Dynamical System in Reproducing Kernel Hilbert Space: An Operator-Theoretic Approach", in Proceedings of *the Fortieth International Conference on Machine Learning (ICML)*, 2023.
- **B. Hou**, S. Sanjari, N. Dahlin, S. Bose, "Compressed Decentralized Learning of Conditional Mean Embedding Operators in Reproducing Kernel Hilbert Space", in Proceedings of *the 37th Association for the Advancement of Artificial Intelligence (AAAI) Conference on Artificial Intelligence*, 2023.
- **B. Hou**, A.Reddy Ramapuram Matavalam, S.Bose, U.Vaidya, "Propagating Uncertainty Through System Dynamics in Reproducing Kernel Hilbert Space ", under review at *Physica D: Nonlinear Phenomena.*
  - → Also presented as a poster paper at *American Control Conference (ACC)*, 2023.
- A.Reddy Ramapuram Matavalam, **B. Hou,** H.Choi, S.Bose, U.Vaidya, "Data-Driven Transient Stability Analysis Using the Koopman Operator", under submission at *IEEE Transactions on Power Systems*.
- **B. Hou**, S. Bose and U. Vaidya, "Sparse Learning of Kernel Transfer Operators", in Proceedings of *Asilomar Conference on Signals, Systems, and Computers*, 2021.

Boya Hou
PhD Candidate
Department of Electrical and Computer Engineering
University of Illinois, Urbana-Champaign

- **B. Hou**, S. Bose, L. Marla and K. Haran, "Impact of Aviation Electrification on Airports: Flight Scheduling and Charging", IEEE *Transactions on Intelligent Transportation Systems*, 2023.
- **B. Hou**, S. Bose, and K. Haran, "Powering Electric Aircraft at O'Hare Airport: A Case Study", in Proceedings of *IEEE Power and Energy Society General Meeting*, 2020.

WORKING PAPER

- "Finite Time Analysis of Compressed Learning in Reproducing Kernel Hilbert Space"

AWARDS

- Rising Stars in EECS, 2023
- Mavis Future Faculty Fellows (MF3), 2023-2024
- M.A.Pai Scholarship, 2023
- AAAI Student Scholarship, 2023
- The second-place winner in the United States Association for Energy Economics (USAEE) Case Competition, 2019.
- Outstanding undergraduate thesis of Zhejiang University, 2018.
- UCLA Cross-disciplinary Scholars in Science and Technology (CSST) Scholarship, 2017
- First-Class Scholarship of Zhejiang University, 2015.

TEACHING

Fall 2021, Teaching Assistant, ECE 365 Data Science and Engineering, UIUC

OTHER ACADEMIC ACTIVITIES

- Leading weekly reading group on learning in games and mean field games. Fall 2023
- Led weekly reading group on Function Analysis. July 2021-Dec 2021
- Visiting undergrad scholar**,** Henry Samueli School of Engineering, UCLA. July 2017-Sep 2017

TECHNICAL SKILLS

Languages: Python, C, C++
Applications: OpenAI Gym, Matlab, Simulink, Sklearn, CVXPY.