

Curriculum Vitae of Yi JU

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last updated: Oct 2024

Short Biography

Yi Ju (Chinese: 居益) is a graduate student researcher in the Systems Engineering PhD program at UC Berkeley. His research specializes in sustainable and intelligent energy systems, with applications in buildings, microgrids, transportation and other societal systems. Leveraging a multidisciplinary background in computer sciences, operations research, and economics, his work integrates cutting-edge computation advances (e.g., deep learning), with a commitment to inclusive and accessible clean energy solutions. In his recent research, he designs innovative electric vehicle charging management strategies and explores the societal dynamics of California's transportation decarbonization pathway through advanced agent-based simulations that incorporate extensive mobility data. His work received the Building Simulation 2023 best student paper award, among other honors and recognitions. Yi Ju received his Bachelor's degree in Engineering from Tsinghua University in 2020, as well as a dual Bachelor's degree in Economics from Peking University.

research interests: techno-societal system control; computational city sciences; energy & environmental economics; machine learning for optimization (ML4OPT); agent-based simulation, *incl.* LLM agents.

Education

University of California, Berkeley <i>advisor:</i> Scott Moura <i>qualifying exam committee:</i> Joan Walker (chair), Alexandre Bayen, Marta Gonzalez, Scott Moura	PhD in Systems Engineering	2023.8 – 2026.5 (expected)
University of California, Berkeley <i>major:</i> Building Science, Technology & Sustainability <i>advisor:</i> Stefano Schiavon	MS in Architecture	2021.8 – 2023.5
Tsinghua University <i>major:</i> Building Environment and Energy Engineering	B.Eng. in Building Science	2016.8 – 2020.6
Peking University <i>affiliation:</i> National School of Development	B.Econ. (<i>dual degree</i>)	2017.8 – 2020.6

Work, Internship, & Short-term Visit

Massachusetts Institute of Technology <i>host:</i> Jinhua Zhao Dept. of Urban Studies & Planning	Visiting Student	2025.2 – 2025.5
Tsinghua University <i>supervisor:</i> Bin Cao Dept. of Building Science	Research Assistant	2020.8 – 2021.6
The University of Sydney <i>host:</i> Richard de Dear Indoor Environmental Quality Lab	Visiting Student	2019.8 – 2019.9
University of California, Berkeley <i>host:</i> Hui Zhang Center for the Built Environment	Visiting Student	2018.7 – 2018.8

Publications

also see my [Google Scholar](#) and [ORCID](#)

journal papers (peer-reviewed)

* corresponding author # contribute equally

- [J6] Lunlong Li[#], Yi Ju[#], Zhe Wang*. *Quantifying the impact of building load forecasts on optimizing energy storage systems*. Energy and Buildings (2024). <https://doi.org/10.1016/j.enbuild.2024.113913>
- [J5] Yi Ju, Teng Zeng, Zaid Allybokus, Scott Moura*. *Robo-chargers: optimal operation and planning of a robotic charging system to alleviate overstay*. IEEE Transactions on Smart Grid (2023). <https://doi.org/10.1109/TSG.2023.3286434>

- [J4] **Yi Ju**[#], Zhe Wang^{#,*}, Xinyuan Ju, Bin Cao, Chen Chen, Borong Lin. *Understanding occupancy patterns of university libraries in the post-pandemic era*. Energy and Buildings (2023). <https://doi.org/10.1016/j.enbuild.2023.113138>
- [J3] Xinwei Zhuang, **Yi Ju**, Allen Yang, Luisa Caldas. *Synthesis and generation for 3D architecture volume with generative modeling*. International Journal of Architectural Computing (2023). <https://doi.org/10.1177/14780771231168233>
- [J2] **Yi Ju**[#], Xinyuan Ju[#], Hui Zhang, Bin Cao*, Bin Liu, Yingxin Zhu. *Personalized local heating neutralizing individual, spatial, and temporal thermo-physiological variances in extreme cold environments*. Building and Environment (2023). <https://doi.org/10.1016/j.buildenv.2022.109950>
- [J1] Hecheng Yang, Bin Cao*, **Yi Ju**, Yingxin Zhu. *The effects of local cooling at different torso parts in improving body thermal comfort in hot indoor environments*. Energy and Buildings (2019). <https://doi.org/10.1016/j.enbuild.2019.06.004>

conference proceeding papers

this list is incomplete.

- [C] Ruiting Wang, **Yi Ju**, Zaid Allybokus, Wenten Zeng, Nicolas Obrecht, Scott Moura*. *Optimal sizing, operation, and efficiency evaluation of battery swapping station for electric heavy-duty trucks*. American Control Conference 2024. July, Toronto. **ASME Energy Systems Technical Committee Best Paper Award**
- [C] **Yi Ju**, Scott Moura. *Pricing scheme design for vehicle-to-grid considering customers risk-averse behaviors*. Building Simulation 2023. September, Shanghai. **Best Student Paper (2/289)**
- [C] **Yi Ju**, Teng Zeng, Zaid Allybokus, Scott Moura*. *Optimal operation with Robo-chargers in plug-in electric vehicle charging stations*. American Control Conference 2023. June, San Diego.
- [C] **Yi Ju***, Zhe Wang, Xinyuan Ju, Bin Cao, Chen Chen. *Understanding occupancy pattern of university libraries in the post-pandemic era*. Indoor Air 2022. June, Kuopio.
- [C] **Yi Ju**, Bin Cao*, Xinyuan Ju. *Development of a similarity function to evaluate interpersonal differences in body thermal sensitivity distribution patterns*. Indoor Air 2020. November, Seoul (virtual).

papers in preparation

manuscripts and/or slides are available on reasonable requests.

- [W] *Trajectory-integrated accessibility analysis of public electric vehicle charging stations*. with Jiaman Wu, Marta Gonzalez, Jinhua Zhao, and Scott Moura.
- [W] *Benchmarking deep-learning-based Vehicle Routing Problem (VRP) solvers on non-Euclidean instances*. with Lejun Zhou, Yifan Yin, and Scott Moura.

patents

- [P] **Yi Ju**, Teng Zeng, Scott Moura, Zaid Allybokus. *Method and apparatus for operating electric vehicle charging infrastructure*. US Patent. 18/145,509, 2024.
- [P] Bin Cao, Xinyuan Ju, **Yi Ju**. *System, Method, device, and electronic apparatus for individual thermal comfort control*. China Invention Patent. CN116125866B.

Invited Talks

conference (with proceedings) oral presentations excluded

Trajectory-integrated accessibility analysis of public electric vehicle charging stations

Oct 2024 The Economics and Policy of Electric Transportation Charging Infrastructure Workshop. The Satala Institute, Harvard University, Cambridge, MA.

Highlighted Coursework

only Berkeley courses listed. * means taking this semester

Systems Engineering Core

CE 295	Data Science for Energy [A+]	CE 263H	Human Mobility & Network Science [A]
CE 290I	Civil Systems: Control & Info. Mgmt. [A]	CE 264	Behavioral Modeling for Transportation [A-]

Computer Sciences

CS 188	Intro to Artificial Intelligence [A+]	CS 289A	Intro to Machine Learning [A+]
CS 282A	Deep Neural Networks [A+]	CS 285	Deep Reinforcement Learning [A]

Controls

EE C231A	Model Predictive Control [A]	EE 221A	Linear Systems Theory *
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Economics

ECON 201A	Microeconomics Theory I [A-]	ECON 201B	Microeconomics Theory II [A]
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Operations Research & Mathematics

EE 227BT	Convex Optimization [A]	IEOR 266	Network Flows & Graphs [A]
IEOR 263A	Applied stochastic process I [A+]	IEOR 263B	Applied stochastic process II [A]
MATH 106	Mathematical Probability [A+]	MATH 228A	Numerical Solution of ODEs *

Teaching

semester	course id: title (university if not Berkeley)	instructor	[course type, section sizes]	role	(scores, if applicable)
Fa 2024	E7: Introduction to Computer Programming for Scientists and Engineers [lower-division, 100 ppl.]			Mohamad Hallal	
Sp 2021	Human Thermal Comfort (Tsinghua University) [upper-division, 30 ppl.]			Bin Cao	
Sp 2018	Outline of Chinese Modern History (Tsinghua University) [lower-division, 36 ppl.]			Jiao Li	

Academic Services

journal review

Automation in Construction, Energy, Energy and Buildings, IEEE Transactions on Industrial Informatics

conference review

American Control Conference 2024, Power Systems Computation Conference 2023

student mentorship

Lejun Zhou	2023.1 – present	MS & PhD student, Berkeley CEE	
Jingchun Wang	2024.10 – present	MS student, Berkeley CEE	
Linfeng Xie	2023.8	Tsinghua undergrad, Berkeley visiting student	
Xinyuan Ju	2019.3 – 2022.12	Tsinghua undergrad & Master	
Berkeley Energy & Resource Collaborative (BERC) mentor	2024.10 – present		mentees: Alisha Khan, Jacky Li

Referees

Scott Moura	Assoc. Prof. of CEE, Berkeley	PhD research advisor	smoura@berkeley.edu
Joan Walker	Dept. Chair of CEE, Berkeley	qualifying committee chair	joanwalker@berkeley.edu
Marta Gonzalez	Assoc. Prof. of CEE, Berkeley	research collaborator	martag@berkeley.edu
Jinhua Zhao	Prof. of DUSP, M.I.T.	research collaborator	jinhua@mit.edu

Miscellaneous

languages

Mandarin Chinese (native), English (fluent)

programming languages, software & frameworks

proficient in Python and PyTorch. with experience in MATLAB, JAVA, C, R, and ESP32, Arduino.

fun facts

my favorite places around Berkeley campus are: Earth Sciences & Map Library for its amazing map collections, Lawrence Hall of Science for the stunning view from its platform, and Moe's book, a fantastic four-story second-hand book store.