Madalsa Singh

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EDUCATION

Stanford University Sep 2019 - Jun 2024 (expected)
PhD Candidate
Energy Resources Engineering

Carnegie Mellon University Aug 2018 - May 2019
Master of Science
Energy Science and Mechanical Engineering

Indian Institute of Technology Bombay Aug 2011 - Aug 2015
Bachelor of Technology
Materials Science and Metallurgical Engineering

PUBLICATIONS

- Distributional impacts of fleet-wide change in light duty transportation: mortality risks of $PM_{2.5}$ emissions from electric vehicle and Tier 3 conventional vehicles. (with Chris Tessum, Julian Marshall, Inês Azevedo) [in review]
- How clean does the U.S. electricity grid need to be to ensure electric vehicles reduce greenhouse gas emissions? (with Tugce Yuksel, Jeremy Michalek, Inês Azevedo [in-review]
- Pathways to Zero Emissions in California's Light-Duty Transportation Sector. (with Nora Henessey, Sarah Saltzer, Inês Azevedo) [in submission]
- Pathways to Zero Emissions in California's Heavy-Duty Transportation Sector. (with Nora Henessey, Sarah Saltzer, Inês Azevedo) [in submission]
- How differential privacy will affect our understanding of air pollution exposure and disparities in the United States. *Findings* 2023.
- Performance metrics required of next-generation batteries to electrify commercial aircraft. (with Alexander Bills, Shashank Sripad, Venkat Vishwanathan). *ACS Energy Letters* 2020
- Microhybrid electricity system for energy access, livelihoods, and empowerment. (with P. Balachandra). *Proceedings of the IEEE* 2019

CONFERENCE & TALKS

- INFORMS 2023.
- Transport Research Annual Meeting 2023
- International PhD Workshop on Sustainable Development, Columbia University, 2023, 2022
- American Geophysics Unions Fall 2022
- United States Association for Energy Economics, 2022
- Stanford Energy Student Lecture, 2020
- Women in Clean Energy Symposium, Stanford University, 2019
- India Energy Acccess Summit, 2018
- Internation Conference of Indian Society of Ecological Economics, 2017

AWARDS

The William H. Bourne Fellowship, 2023
AGU Travel Grant, 2022
Fellow, Inaugural Aspen Climate Cohort 2022 (*declined*)
Winner, United States Energy Economics Case Competition, 2020
Alumni Award, Carnegie Mellon University, 2018
EST&P Travel Grant, Carnegie Mellon University, 2018
Science Fellowship, Department of Science and Technology, Government of India, 2011 *(declined)*

SERVICE

Teaching : Quantitative Methods for Energy Decisions 2021. 1 out of 2 teaching assistants responsible for grading, office-hours, extra lectures, and problem set conceptualization

Reviewer: IEEE Vehicle Power and Propulsion, Energy Policy, Environment Research Letters

Department Service: Graduate Student Advisory Committee Representative, Department of Energy Resources Engineering, Stanford University (2022-)

Graduate Student Panelist, Stanford School of Earth, Energy & Environmental Sciences Faculty Search, 2021

President, Women in Earth Sciences, Stanford University (2021-)

Department Mentor, Energy Resources Engineering, Stanford University (2021-2022)

RESEARCH

Interdisciplinary Energy Systems Group, Stanford University

Ph.D Candidate, Stanford University

Advisor: Prof. Inês Azevedo Aug 2019 - Present

- Reliable decarbonization in transportation and electricity sectors while ensuring better public health, consumer affordability, and favorable system economics

Electrochemical Energy Group

Graduate Student Researcher, Carnegie Mellon University

Advisor: Prof. Venkat Vishwanathan Aug 2018 - Aug 2019

- Modeling cost and battery degradation for electric Vertical Take-Off and Landing (eVTOL) vehicles for urban mobility applications

Rural Hybrid Energy Enterprise System (RHEES)

Project Assistant, Indian Institute of Science, Bangalore

Advisor: Prof. Balachandra Patil Oct 2016 - Nov 2017

- Engineering and techno-economic-emissions feasibility analysis for a hybrid containerized renewable micro-grid installed in unelectrified blocks of Western Ghats, India

Causality Analysis of Economic Growth and Energy Imports

Bachelor's Thesis, IIT Bombay, Mumbai

Advisor: Prof. Anand Khanna June 2014 - Feb 2015

- Causal inference methods for economic growth and trade deficit analysis of India

PROFESSIONAL EXPERIENCE

Tesla Inc. *Algorithms and Operations Intern* June 2022 - Sept 2022

California Public Utilities Commission, Office of Commissioner Martha Guzman Aceves *Energy Systems Intern* May 2021 - Sept 2021

- Lead in-house energy systems modeler for commission's net energy metering rulemaking for prosumers : NEM3.0 proceeding and proposed decision

Oorja Development Solutions Ltd., *Technical Consultant* Oct 2017 - July 2018

Deutsche Bank AG, *Intern* (return offer) May 2014 - July 2014

Applied Materials, Inc., *Technology Intern* (return offer) May 2013 - July 2013