Shushman Choudhury

LinkedIn| Website | Github | Scholar
shushman@cs.stanford.edu (Please email for longer CV)

INTERESTS

Multi-Domain Artificial Intelligence; Applied Research; Technical Leadership

EDUCATION

STANFORD UNIVERSITY | Ph.D. in Computer Science | 2017 - 2021

CARNEGIE MELLON UNIVERSITY | M.S. in Robotics | 2015 - 2017

IIT KHARAGPUR | B.Tech in Computer Science and Engineering | 2011 - 2015

EXPERIENCE

GOOGLE RESEARCH | AI Software Engineer

Oct 2023 - Current | Mountain View, CA / Houston, TX

- Developing **world-scale AI algorithms and applications** to reason about human activity in the built environment.
- Collaborating with 20+ researchers across Google on a **multi-track Geo Foundation Models** effort.
- Working **cross-functionally** with Google Maps, Sustainability, and Ads on fundamental research and product impact.

LACUNA TECHNOLOGIES, INC. | Technical Lead, Research Team

Jul 2021 - Jul 2023 | Palo Alto, CA

- Led in-house research team of data scientists and ML engineers to build AI-powered transportation solutions for **multiple major US cities and airports** . Presented insights and recommendations to policy-makers and C-suite executives.
- **Led machine learning pipeline development** for the Fleet Conductor product, which optimized the last-block operations of delivery fleets in urban hotspots.
- **Bayesian inference** and **optimization** models for vehicle traffic at **Seattle-Tacoma Airport** ; accurately estimated how effective congestion management was, and created an algorithm to improve congestion by up to 300% (1, 2).

STANFORD ARTIFICIAL INTELLIGENCE LABORATORY | PhD Researcher

Sep 2017 - Jun 2021 | Stanford, CA

- Developed state-of-the-art algorithms for hierarchical multi-agent decision-making.
- Best Overall Paper at AAMAS 2021 and Best Multi-Agent Finalist at ICRA 2020.
- Research featured in VentureBeat, BBC Digital Planet, and IEEE Spectrum

MICROSOFT RESEARCH | AI PhD Intern

Summer 2020 | Redmond, WA

- Multi-task deep reinforcement learning by computing and adapting shared representations.

LANGUAGES/TOOLS/TECHNIQUES

• Python (10+ yrs) • C++ (10+ yrs) • Tensorflow •Pandas • PyMC • Scikit-Learn • Pytorch
• Foundation Models • Representation Learning • Multi-Agent Systems • Reinforcement Learning • Planning and Decision-Making under Uncertainty • Combinatorial Optimization • Statistical Inference • Geospatial AI

SELECTED PUBLICATIONS

Towards a Trajectory-powered Foundation Model of Mobility
ACM SIGSPATIAL 2024 International Workshop on Spatial Big Data and AI for Industrial Applications **Invited Talk**
Efficient Large Scale Multi-Drone Delivery Using Transit Networks
International Conference on Robotics and Automation 2020 **Best Multi-Robot Finalist** Journal of AI Research 2021
Scalable Anytime Planning for Multi-Agent MDPs
Autonomous Agents and Multi-Agent Systems 2021 **Best Paper** Journal of AI Research 2022
Dynamic Multi-Robot Task Allocation under Uncertainty and Temporal Constraints
Robotics Science and Systems (RSS) 2020 Springer Autonomous Robots (AuRO) 2022