Shushman Choudhury

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

INTERESTS

AI for Transportation/Logistics; Multi-Agent Optimization and Decision-Making; Robotic Path Planning and Routing

EDUCATION

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

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

EXPERIENCE

LACUNA TECHNOLOGIES, INC. | Technical Lead, Research Team
Jul 2021 - Ongoing | Palo Alto, CA

- Led our in-house research team of data scientists and ML engineers in building optimization and decision-making solutions for **multiple major US cities and airports** .
- Coordinated cross-functionally with engineering, product, and strategy teams to integrate technologies into existing systems and shape their future vision. Communicated critical insights and decisions to C-suite executives.
- **Bayesian inference** and **optimization** models for vehicle traffic at **Seattle-Tacoma Airport** ; accurately estimated the efficacy of congestion management strategies and created an algorithm to improve congestion by up to 300% (1, 2).
- Designed a comprehensive optimization framework for **dynamic curbside allocation in downtown Seattle** (1)
- Gave multiple invited industry/academic talks, e.g., PacTrans 2022, TESC 2022, UFL Quarterly 2022, CPS-IoT 2023.

STANFORD INTELLIGENT SYSTEMS LABORATORY (SISL) | PhD Researcher
Sep 2017 - Jun 2021 | Stanford, CA

- Developed state-of-the-art algorithms for hierarchical multi-agent decision-making.
- Best Paper at AAMAS 2021 and best multi-robot finalist at ICRA 2020.
- Research featured in VentureBeat, BBC Digital Planet, and IEEE Spectrum (among others)

STANFORD LAW SCHOOL | Tech Policy Lab Member
Sep 2018 - Apr 2019 | Stanford, CA

- Advised INTERPOL [Article] , the Administrative Conference of the United States [Report], and the US federal goverment task force on the National Research Cloud [Article].

MICROSOFT RESEARCH REDMOND (MSR) | AI PhD Intern
Summer 2020 | Remote

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

CMU PERSONAL ROBOTICS LAB | Research Assistant
Aug 2015 – Aug 2017 | Pittsburgh, PA

- Efficient motion planning for robot manipulation, validated on a bi-manual manipulator.

SELECTED PUBLICATIONS

Efficient Large Scale Multi-Drone Delivery Using Transit Networks
IEEE ICRA 2020 **Best Multi-Robot Paper Finalist**   Journal of Artificial Intelligence Research (JAIR) 2021
Scalable Anytime Planning for Multi-Agent MDPs
AAMAS 2021 **Best Paper**   Journal of Artificial Intelligence Research (JAIR) 2022
Estimating Driver Response Rates to Variable Message Signage at Seattle-Tacoma International Airport
Transport Findings Journal 2022
Optimal, Centralized Dynamic Curbside Parking Space Zoning
IEEE Intelligent Transportation Systems Conference 2022
Dynamic Multi-Robot Task Allocation under Uncertainty and Temporal Constraints
Robotics Science and Systems (RSS) 2020 Springer Autonomous Robots (AuRO) 2022

LANGUAGES AND LIBRARIES

• Python (5 yrs) • C++ (5 yrs) • Julia (4 yrs) • Python-MIP • Pandas • PyMC • Scikit-Learn • Pytorch • AWS