

# 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; 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 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)

**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**

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

**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

**Coordinated Multi-Agent Pathfinding for Drones and Trucks over Road Networks**

Autonomous Agents and Multi-Agent Systems 2022

**Pareto-optimal search over configuration space beliefs for anytime motion planning**

Intelligent Robots and Systems (IROS) 2016

## LANGUAGES AND LIBRARIES

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