

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

Advisors - Mykel Kochenderfer and Jeannette Bohg

School of Engineering Graduate Fellowship 2017-18 | VMWare Graduate Fellowship 2020-21

CARNEGIE MELLON UNIVERSITY | M.S. IN ROBOTICS | AUG 2015 - AUG 2017

Advisor - Siddhartha Srinivasa

EXPERIENCE

LACUNA TECHNOLOGIES, INC. | LEAD RESEARCH SCIENTIST

Jul 2021 - Ongoing | Palo Alto, CA

- Technical Lead of the Research team, which also has expertise in ML Engineering and geospatial data science.
- Intelligent decision-making for transportation and logistics problems, in partnership with US cities and airports.
- Selected projects: Vehicle traffic modeling and optimization for airports (blog 1, 2), Optimization for dynamic curbside allocation (blog), dynamic curbside supply-demand matching for delivery fleets (confidential work).
- Represented Lacuna at multiple invited public talks: PacTrans 2022, TESC 2022, UFL Quarterly 2022, CPS-IoT 2023 (please see embedded links for details)

STANFORD INTELLIGENT SYSTEMS LABORATORY (SISL) | PHD RESEARCHER

Sep 2017 - Jun 2021 | Stanford, CA

- Hierarchical allocation, routing, and control algorithms for large multi-robot networks.
- Work on drone-transit routing 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 government 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 anytime motion planning for robot manipulation, validated on a bimanual manipulator.

SELECTED PUBLICATIONS

Efficient Large Scale Multi-Drone Delivery Using Transit Networks S. Choudhury, K. Solovey, M. J. Kochenderfer, and M. Pavone. IEEE ICRA 2020 **Best Multi-Robot Paper Finalist** Journal of Artificial Intelligence Research (JAIR) 2021

Estimating Driver Response Rates to Variable Message Signage at Seattle-Tacoma International Airport S. Vasisht, S. Choudhury, N. Nazir, S. Zoepf, and C. Dowling. Transport Findings 2022

Optimal, centralized dynamic curbside parking space zoning N. Nazir, C. Dowling, S. Choudhury, S. Zoepf, K. Ma. IEEE Intelligent Transportation Systems Conference 2022

Coordinated Multi-Agent Pathfinding for Drones and Trucks over Road Networks S. Choudhury, K. Solovey, M. J. Kochenderfer, and M. Pavone. International Conference on Autonomous Agents and Multi-Agent Systems 2022

Dynamic Multi-Robot Task Allocation under Uncertainty and Temporal Constraints S. Choudhury, J. K. Gupta, M. J. Kochenderfer, D. Sadigh, and J. Bohg. Robotics Science and Systems (RSS) 2020. Springer Autonomous Robots (AuRO) 2022

A system for multi-step mobile manipulation: Architecture, algorithms, and experiments S. Srinivasa et al. International Symposium on Experimental Robotics (ISER) 2016.

LANGUAGES AND LIBRARIES

• Julia • C++ • Python • Pandas • PyMC • POMDPs.jl • Pytorch • OMPL • ROS