Samuel Triest

striest@andrew.cmu.edu - (650)-208-0981 - Github - Linkedin

Education

Carnegie Mellon University **Fall 2020 - Spring 2022**
Degree(s): M.S. in Robotics

University of Rochester **Fall 2016 - Spring 2020**
Degree(s): B.S. in Computer Science, B.A. in Business, minor in Electrical Engineering
GPA: 3.99/4.00 (*Summa cum laude*)
Advisors: Thomas Howard, Yuhao Zhu
Distinctions: Highest Distinction and Highest Honors in Research, Beta Gamma Sigma, Phi Beta Kappa
Relevant Coursework: Machine Learning, Autonomous Mobile Robots, Robot Control, Computer Vision, Data Mining, Advanced Algorithms

Technical Skills

Programming Languages: Python, C++, Java, C, SQL
Frameworks/Tools: Pytorch, ROS, Tensorflow, Keras

Research Experience

Research Intern **September 2019 - December 2019**
Dolan Lab [1]*, Carnegie Mellon University*
Advisor: John Dolan

Continuing work on trajectory generation for autonomous vehicles in dense traffic via deep reinforcement learning. Implemented algorithms based on hierarchical reinforcement learning and low-level controllers to generate highway merging behaviors in dense traffic.

Robotics Institute Summer Scholar **June 2019 - August 2019**
Dolan Lab, Carnegie Mellon University
Advisor: John Dolan

Researched reinforcement learning-based approaches to trajectory generation in autonomous vehicles, focusing on scenarios with high degree of interaction between vehicles. Developed algorithms for trajectory generation that combined traditional controllers and deep imitation learning and validated results on real-world highway data.

Undergraduate Researcher **October 2018 - May 2020**
Horizon Lab, University of Rochester
Advisor: Yuhao Zhu

Researched integration of optical and hardware elements into training of computer vision algorithms in resource-constrained environments. Implemented optical forward-modeling using point-spread functions, and implemented motivational experiments for optical-algorithmic co-design.

Papers

Samuel Triest, Adam Villaflor, John M. Dolan
Ramp Merging Via Reinforcement Learning with Temporally-Extended Actions
2020 IEEE Intelligent Vehicles Symposium

Samuel Triest, Adam Villaflor, John M. Dolan
Learning Low-level Continuous Control for Ramp Merging in Dense Traffic
2019 RISS Working Papers Journal

Samuel Triest, Daniel Nikolov, Jannick Rolland, Yuhao Zhu
Co-Optimization of Optics, Architecture and Computer Vision Algorithms
WAX @ PLDI 2019

[1] Now part of Argo AI Center for Autonomous Vehicle Research

Theses

Samuel Triest
Unsupervised Reinforcement Learning in Environments with Strong Priors
University of Rochester

Presentations

Robotics Institute Summer Scholars Research Showcase (Poster)	Aug. 2019
WAX @ PLDI 2019 (Talk)	June 2019
University of Rochester Undergraduate Research Symposium (Talk)	April 2019
ACM Student Research Competition @ ASPLOS 2019 (Talk, Poster)	April 2019

Awards, Grants, Scholarships

Award for Excellence in Undergraduate Research in Computer Science	May 2020
Honorable Mention, CRA Outstanding Undergraduate Researcher Award	Dec. 2019
NSF REU Scholarship (NSF Award 1659774, CMU RISS)	June 2019
Gold Medalist, ACM Student Research Competition @ ASPLOS 2019	April 2019
Dean's Scholarship (University of Rochester)	Sept. 2016-May 2020
Dean's List (University of Rochester, 6/6 eligible semesters)	Sept. 2016-May 2019

Teaching and Professional Service

Teaching Assistant

Artificial Intelligence	Spring 2018, Fall 2018
Algorithms	Fall 2018, Spring 2020
Computer Architecture	Spring 2019
Business Information Systems	Spring 2019

UR Robotics Club

Vice President	May 2019 - May 2020
President	May 2018 - May 2019
Lab Manager	May 2017 - May 2018

Industry Experience

Product Management Intern **Summer 2018**
Waterline Data

Conducted research and created POC for scheduling jobs using constraint satisfaction. Contributed several plugins for Waterline integration with third-party software. Expanded scope of Waterline's product demo, assisted with updating sandbox and demos for Microsoft Azure.

Engineering Intern **Summer 2017**
Waterline Data

Contributed test cases and automation to several product features. Created a utility to detect duplicate data. Leveraged existing APIs of the Waterline Data Catalog to determine the likelihood of data duplication between data resources using existing metadata and generate a report in Tableau.

Independent Study Projects

Robotics Workshops

Implemented a series of workshop for the Robotics Club at the University of Rochester covering various algorithmic components of robotics, including kinematics, planning, Markov decision processes, etc.

Domain-Specific Language for Graph Algorithms

Designed and provided theoretical motivation for a domain-specific language for graph algorithms based on highly composable parallel graph primitives. Implemented parallel versions of a representative set of graph algorithms (including BFS, SSSP, connected components, k-core decomposition) using this language.