

Samuel Triest

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Education	Carnegie Mellon University Degree(s): M.S. in Robotics	Fall 2020 - Spring 2022
	University of Rochester Degree(s): B.S. in Computer Science, B.A. in Business, minor in Electrical Engineering GPA: 3.99/4.00 (<i>Summa cum laude</i>) Advisors: Thomas Howard , Yuhao Zhu Distinctions: 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	Fall 2016 - Spring 2020
Technical Skills	Programming Languages: Python, C++, Java, C, SQL Frameworks/Tools: Pytorch, ROS, Tensorflow, Keras	
Research Experience	Research Intern <i>Dolan Lab</i> ¹ , <i>Carnegie Mellon University</i> 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.	September 2019 - December 2019
	Robotics Institute Summer Scholar <i>Dolan Lab, Carnegie Mellon University</i> 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.	June 2019 - August 2019
	Undergraduate Researcher <i>Horizon Lab, University of Rochester</i> 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.	October 2018 - May 2020
	Papers Samuel Triest , Adam Villafior, John M. Dolan Ramp Merging Via Reinforcement Learning with Temporally-Extended Actions <i>2020 IEEE Intelligent Vehicles Symposium</i> Samuel Triest , Adam Villafior, John M. Dolan Learning Low-level Continuous Control for Ramp Merging in Dense Traffic <i>2019 RISS Working Papers Journal</i> Samuel Triest , Daniel Nikolov, Jannick Rolland, Yuhao Zhu Co-Optimization of Optics, Architecture and Computer Vision Algorithms <i>WAX @ PLDI 2019</i>	

¹Now part of Argo AI Center for Autonomous Vehicle Research

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
	<i>Waterline Data</i>	
	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
	<i>Waterline Data</i>	
	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, 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.	
	6 DOF Robot Arm	
	Led a team of roughly ten undergraduates in the design, fabrication, and algorithm development of a 6 degree-of-freedom robot arm. Implemented forward and inverse kinematics, and probabilistic roadmap-based control in operational space.	

