Samuel Triest

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Education

University of Rochester **Rochester, NY**

B.S. Computer Science, B.A. Business, minor in Electrical and Computer Engineering (focus in robotics), minor in Math *Expected May 2020*

- GPA: 3.99, Dean's List 6/6 Semesters, Dean's Scholarship, member of ACM, Beta Gamma Sigma Business Honor Society
- Advisors: Thomas Howard, Yuhao Zhu

Skills

Programming Languages:

- Python, Java, C, Matlab, Julia, Ruby, C++, Haskell, SQL

Programming Tools/Frameworks:

- Pytorch, Tensorflow, Tableau, Git, Vim

Professional Experience

Robotics Institute, Carnegie Mellon University **Pittsburgh, PA**

Robotics Institute Summer Scholar *June 2019-August 2019*

- Under Professor John Dolan, investigated reinforcement learning-based approaches to merge planning in autonomous vehicles.
- Implementing inverse reinforcement learning to generate human-like trajectories for highway merging scenarios.

University of Rochester **Rochester, NY**

Undergraduate Researcher *October 2018-present*

- Working under Professor Yuhao Zhu to research co-optimization of software and hardware for computer vision tasks.
- Implemented forward-modeling of image data though various optical systems, and automatic task-specific co-optimization of optical elements and computer vision algorithms.
- Publication: Co-Optimization of Optics, Architecture, and Vision Algorithms (WAX '19, first author)

Teaching Assistant *January 2018-present*

- Help reinforce students' understanding of course material through leading workshops, grading/designing projects and exams.
- TA for the following courses: CSC 242 Artificial Intelligence, CSC 282 Design and Analysis of Efficient Algorithms, CSC 252 Computer Architecture, CSC 254 Programming Language Design, GBA 220 Business Information Systems and Analytics

Waterline Data **Mountain View, CA**

Product Management Intern *May 2018-August 2018*

- Conducted research and created POC for scheduling jobs using constraint satisfaction.
- Contributed several plugins for Waterline integration with third-party software.

Engineering Intern, QA team *June 2017-August 2017*

- 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 several hundred data resources using existing metadata and generate a report in Tableau.

Selected Coursework and Projects

University of Rochester **Rochester, NY**

Domain-specific Language for Graph Algorithms *January 2019-present*

- Designed a DSL for efficient parallel graph algorithms based on highly composable parallel graph primitives.
- Implemented a representative set of graph algorithms including BFS, SSSP, connected components, k-core decomposition.
- Project Advisor: Professor Sreepathi Pai

Network Analysis (Autonomous Vehicles) *January 2019-May 2019*

- Covered topics in network analysis, including statistical description and inference on graphs and completed a group project.
- Analyzed the effect of various network structures of autonomous vehicles on throughput and speed of message passing.

6-Degree of Freedom Robot Arm *February 2018-January 2019*

- Implemented inverse kinematics in Python for operational space control of end effector position and orientation.
- Led a team of roughly 10 undergraduates in design of the arm and its control algorithms.

Connected Components-Based SCAN Clustering *August 2018-December 2018*

- Proposed implementation of SCAN algorithm using parallel connected components algorithm.
- Implemented in Java to show 400-fold reduction in serialized operations when compared to a parallel BFS approach.

Leadership and Awards

ACM Student Research Competition (ASPLOS '19) **Providence, RI**

First Prize, Co-optimization of Optics, Architecture and Vision Algorithms *April 2019*

- Presented research on incorporation of optical and hardware elements into the training process of convolutional neural networks.
- Presented in a poster session, as well as a 15-minute presentation.

University of Rochester Robotics Club **Rochester, NY**

President *February 2018-May 2019*

- Lead organization of roughly 40 undergraduates in designing and building robots, as well as teach robotics concepts.
- Secured school funding for UR Robotics for the first time, increased the number of workshops and existing projects.