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Jason Ashton

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Profile

Software engineer with experience in robotics, sensors, machine learning, and data analysis. Looking for opportunities to work in technically challenging environments, focusing on robotics, automotive, and performance-critical applications.

Experience

Woven Planet Level 5 Self-Driving Software Engineer Palo Alto, CA, August 2019 - Present
Formerly Lyft Level 5, acquired July 2021

Role: Engineer on the Perception & Autonomy team, focused on improving model performance, developing sensor data pipelines & runtime components, and building tools and improving workflows.

- *Leverage New LiDAR Signals:* Utilized additional LiDAR features to improve model performance. Starting with discussing effectiveness with manufacturer, validated potential by conducting off-vehicle tests. Wrote data pipeline and interface and conducted a series of rigorous tests to prove road-worthiness, leading deployment to production. Additional signals led to 17% precision and 36% recall improvement in OBSCURANT, solving significant on-road problems.
- *Fleet Data Collection Prototype:* Led development of on-vehicle software for prototype low-cost, large-scale stereo camera data collection vehicles. Worked with stereo camera vendors, built data pipeline, timing, and visualization software. Simulating data & pipeline before receiving hardware led to fast bring up, keeping program on schedule. Successful project execution led to 1000's of miles of validation and proved the viability of a key company strategy.
- *Improve Reflection Performance:* Developed heuristic-based search techniques to identify training data for perception model to better handle reflections & retro-reflectors. Built upon simulation framework to further extract information not collected in real-time. Targeted data curation & retraining led to an additional 4% IOU improvement in OBSCURANT.
- *Perception Stack on New Platform:* Was responsible for managing deployment of Perception software stack on a new vehicle platform & architecture with all new sensor and compute configurations. Wrote sensor drivers for new LiDAR, added support for a new timing protocol and hardware, and facilitated thorough testing for a smooth deployment.
- *Documentation & Engineering Excellence:* Helped found the Documentation Working Group to improve documentation of code, systems, and architectures. Developed a *Doxygen* development pipeline and established code comment standards. Participated as a speaker and organizer in multiple 'Quality Weeks'.

Lyft Level 5 Self-Driving Software Engineer Intern Palo Alto, CA, May 2018 - Aug 2018

Role: Worked on Perception & Calibration team, wrote the first version of an automatic calibration pipeline that formed the foundation of the current vehicle calibration tools.

Lockheed Martin Engineer Intern Stratford, CT, May 2017 - Aug 2017

Role: Worked on the SARA autonomous helicopter project. Developed an efficient path planning collision-detecting algorithm using bounding-box trees. Developed prototype of ship-deck detection algorithm.

Education

Worcester Polytechnic Institute - B.S. Computer Science Worcester, MA, May 2019

Relevant Skills

C++, Python, LiDAR, Vision, ROS, Linux, GNSS, PTP, BigQuery/SQL