Trevor Decker

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Summary

A results driven robotisits with management experience in fast-paced startups. I specialize in leading autonomous systems projects from conception to real-world deployment effectively balancing evolving requirements with proactive risk mitigation in iterative development cycles

Employment

Thirdwave Automation – Staff Engineer/Team Manager **2020 - Present**

Semi autonomous forklifts that allow for a single operator to manage a fleet of multiple forklifts Remote

- Lead a 7-person engineering operations team and serve as the company-wide Release TPM
- Team owns Testing, Release Management, Logging, Data, Triage, Calibration, Sensor Verification
- Managed major and point releases, acting as TPM to align stakeholders on release content and scope
- Architected testing/validation for multiple vehicle types, scheduling projects to mitigate risk.
- Developed safety critical obstacle detector, allowing robot to be ANSI B56 certified
- Led cross company tiger team resulting in 3x truck performance in two months
- Developed testing/CI for the data pipeline, improving reliability by an order of magnitude.

Embark Trucks – Senior Robotics Engineer **2018 - 2020**

Autonomous Semi Trucks operating on highways, Company IPO with $5B Market Cap San Francisco, CA

- Joined as the 16th employee and contributed to company growth to over 200 employees
- Code owner for calibration, lanes, and scene generator: organized projects, and manged junior members
- Developed Vision Map Fusion algorithm extended planning field of view by 600% with map fused prior
- Developed pre and post trip auto-calibration system reducing vehicle down time by 15%
- Organized reading group with >40% company membership, running for over a year

Apple – Special Projects Group **2016 - 2018**

Project Titan, Apples Autonomous Car Project Sunnyale, CA

- Created low cost modular distributed embedded traffic monitoring system for stop light data collection
- Implemented a LiDAR sensor model within Unity simulator enabling off-vehicle validation and Testing.
- Generated ground-truth mapping pipeline fusing data from aerial drones, survey equipment, and logs from car under test allowing for localization metrics to be reported for each release

Education and Internships

Carnegie Mellon University, Pittsburgh, PA

- Bachelors of Science in Electrical Computer Engineering (ECE) **2015**
- Masters of Science in Electrical Computer Engineering (ECE) **2016**
- Minors in Computer Science, Robotics, and Business Administration
- Summer 2015 Intern, Amazon Prime Air
- Summer 2014 Intern, Volkswagen Electronics Research Lab

Research Assistant, CMU Field Robotics Center **2011 - 2016**

- Assisted with software and hardware maintenance/development of 10+ robots
- Built multi-robot co-localization algorithms in low infrastructure environment

Teaching Assistant, CMU Introduction to Robotics **2013 - 2016**

- 2016 lead teaching assistant, managed team of 12 TAs, wrote exams, taught select lectures
- Designed new Bayes filter localization lab, where students solve the lost robot problem

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Activities

Robotic Buggy **2013 - 2016**

Created an autonomous robot which can compete in a traditionally human only gravity race at CMU

- Led a cross-functional team of eight engineers, planning all development and testing activities
- Made feature trade-offs to guarantee success during the robot's single allotted time slot.
- Developed a scalable real time architecture for mapping, path planning, and localization
- Wrote motion model and observation model for GPS, IMU, encoders, cameras, ...
- Built computer vision road lane and feature detectors to help extract robot's state

Distinctions

- patents US9823089 and US10302452B1 for online drone calibration
- 1st place 2017 Apple maps emerging technology reinforcement learning competition
- Computer technician: diagnosed and repaired 650+ laptop computers for school students (2009 - 2011)
- Black Belt,Tang Soo Do Karate
- Won "Coolest Robot" award for skyscrapper window cleaner CMU Mechatronics 2016
- FIRST Robotics 3 years high school participant, 2 years mentor

Skills and Experience

Software:
Python*, C, C++*, JavaScript, React, Jira*, SQL*, Ansible, Terraform*, Docker*, Nomad*, Buildkite*
Kubernetes, Bazel*, Java, ROS

Robotics Experiences
Localization, Mapping, Calibration*, Sensor Fusion*, Simulation*, Autonomous Vehicles*

Hardware
3d Printing, Mill, Lath, Carbon Fiber layup, Electronic assembly, Solid Works/Cad

Other
Jira*, Team Management*, Project Planning*, Forklift Certified*, Release Management*

*Used in current role