Milo Knowles

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github.com/milokhl

WORK EXPERIENCE

Skydio, Redwood City CA - Autonomy Software Intern

June 2019 - August 2019

Implemented autonomy features for exploring, mapping, and imaging buildings.

AdaViv, Cambridge MA - Robotics Intern

January 2018 - March 2018

Built a visual odometry pipeline for estimating the trajectory of a camera in a greenhouse and stitching together overhead imagery. Wrote drivers to synchronize image acquisition from multiple cameras.

Optimus Ride, Boston MA – *Perception Software Intern*

June 2018 - August 2018

Designed and built software in C++ to autogenerate maps from LiDAR, point cloud, and camera datasets.

Kespry, Menlo Park CA – *Software Engineering Intern*

May 2017 - August 2017

Built a web application for annotating training data for deep learning models and evaluating performance.

Robust Robotics Lab, CSAIL – *Research Assistant*

August 2016 - Present

Implemented Kanade-Lucas optical flow for a monocular visual odometry pipeline. Currently working on learning-based methods for monocular depth and pose estimation.

EDUCATION

Massachusetts Institute of Technology - 2019

Computer Science (6-3) - 4.8/5 GPA

PROJECTS

6.141: Robotics Science and Systems

Wrote software modules for an autonomous racecar using C++, Python, and ROS. Algorithmic work included Monte Carlo localization, lane following, RRT*, Closed-Loop RRT, Motion Primitive Planning, and a pure pursuit controller.

MIT Mobile Autonomous Systems Lab 2017 – *1st Place*

Designed, built, and programmed an autonomous robot to navigate through an unknown environment, collect, sort, and stack blocks. Used ROS and OpenCV with nodes in Python and C++.

LANGUAGES & FRAMEWORKS

Languages: C++, Python, MATLAB, Javascript, R, C#, Bash, Halide

Robotics: ROS, OpenCV, PCL, LCM, Mavlink

Machine Learning: PyTorch Tensorflow, Keras

Web: Node.js, React.js, PostgreSQL, HTML, CSS, Firebase

CLASSES

Current

Past
-Video Game Design
-Computational Photography
-Computer Music
-Robot Manipulation
-Intro to Inference
-Linear Algebra
-Underactuated Robotics
-Robotics: Science and Systems
-Machine Learning and Data Science in Politics
-Computer System Design
-Advances in Computer Vision
-Principles of Autonomy and Decision Making
-Applied Machine Learning
-Intermediate Algorithms
-Introduction to Algorithms
-Computation Structures
-Signals and Systems
-Introduction to Astronomy
-Physics I & II
-Calculus I & II
-Differential Equations