Milo Knowles

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WORK EXPERIENCE

Blue Meadow — *CEO & Founder*
Cambridge, MA | Sept 2020 - Dec 2021

Initially developed an IoT monitoring system for seaweed farms, and later pivoted to a carbon crediting platform for coastal restoration projects. Accepted into SeaAhead's BlueSwell accelerator. Gained experience with pitching, customer interviews, market research, hardware prototyping, computer vision for remote sensing, and grant writing.

Robust Robotics Lab (MIT CSAIL) — *Research Assistant*
Cambridge, MA | Aug 2016 - Sept 2020

My masters thesis focused on uncertainty learning and online adaptation for deep stereo depth estimation. As an undergraduate, I worked on projects in monocular visual odometry.

Skydio — *Autonomy Software Intern*
Redwood City, CA | Jun 2019 - Aug 2019

Developed an early prototype of Skydio's 3D Scan software, which allows a drone to rapidly explore, map, and image structures. I worked on mapping algorithms (C++) and a web application (Three.js) for overlaying aerial imagery on structures.

AdaViv — *Robotics Intern*
Cambridge, MA | Jan 2018 - Mar 2018

Implemented a visual odometry pipeline for estimating the pose of a greenhouse camera system and stitching together overhead imagery.

Optimus Ride — *Perception Software Intern*
Boston, MA | Jun 2018 - Aug 2018

Implemented computer vision software for auto-generating lane and curb maps based on LiDAR data. Primarily worked with C++, OpenCV, and the Qt framework.

Kespry — *Software Engineering Intern*
Menlo Park, CA | May 2017 - Aug 2017

Built a web application to streamline training data annotation for deep learning models. This enabled fast internal development and QA on new ML products, such as a rooftop hail damage detection. Gained full-stack web experience across Node.js, SQL, Python.

EDUCATION

Massachusetts Institute of Technology (2019 - 2020)

M.Eng Computer Science (AI) | 5.0 GPA

Massachusetts Institute of Technology (2015 - 2019)

B.S Computer Science (6-3) | 4.8 GPA

PUBLICATIONS

M. Knowles, V. Peretroukhin, W.N. Greene, and N. Roy, "Toward Robust and Efficient Online Adaptation for Deep Stereo Depth Estimation," in *International Conference on Robotics and Automation (ICRA)*, 2021. Available: http://groups.csail.mit.edu/rrg/papers/knowles-icra21.pdf.

SOFTWARE EXPERIENCE

Languages: C++, Python, C#, Javascript, R, MATLAB, CUDA

Robotics & Vision: ROS, OpenCV, LCM, Unity3D, GTSAM

ML: PyTorch

Web: React.js, Node.js, Flask, HTML, CSS, Bootstrap, SQL, Three.js

SELECTED COURSEWORK

Machine Learning and Data Science
Applied Machine Learning
Optimization for Machine Learning
Machine Learning in Politics

Computer Vision and Robotics
Advances in Computer Vision
Computational Photography
Robotics: Science and Systems
Principles of Autonomy and Decision Making

Computer Science
Algorithms for Inference
Design and Analysis of Algorithms
Computation Structures
Computer System Engineering

Computational Biology
Biomolecular Feedback Systems
Intro to Computational Biology