Andy Lambert

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EDUCATION

Massachusetts Institute of Technology — **Cambridge, MA**

➔ **Master of Engineering** *in Electrical Engineering and Computer Science* - GPA: 4.5/5.0 — **2022 - 2023**

- *Relevant Coursework*: Underactuated Robotics; Computer Vision; Inverse Graphics; Optimization Methods

➔ **Bachelor of Science** *in Electrical Engineering and Computer Science* - GPA: 4.6/5.0 — **2017 - 2022**

- *Relevant Coursework:* Robotic Manipulation; Feedback System Design; Intro. to Machine Learning; Circuits & Electronics; Elements of Software Construction; Signals, Systems & Inference

EMPLOYMENT

Pickle Robot, Co. — **Somerville, MA**

Junior Member of Technical Staff — **Jun. 2020 - Sep. 2021**

- Spearheaded the design of sensor calibration techniques using non-linear optimization methods and kinematic data, improving both engineer and customer productivity
- Deployed and serviced 2 robots in logistics warehouses and worked with warehouse associates to augment their workflow, rather than replace labor
- Optimized robot motion to automate truck unloading tasks at 1600 parcels per hour and outbound sorting tasks at rates of 700 parcels sorted per hour
- Devised a reinforcement learning algorithm to automate single and mixed-case palletizing with a robotic arm in Python

Built Robotics, Inc. — **San Francisco, CA**

Robotics Intern — **Summer 2019**

- Improved the safety of autonomous construction vehicles by validating and improving pedestrian detection neural networks (RetinaNet & Mask R-CNN)
- Utilized OpenCV to reduce false positives due to human-like objects in a construction site with machine vision

Cognex Corporation — **Natick, MA**

Software Engineering Intern — **Summer 2018**

- Designed an algorithm to autonomously filtered periodic noise from customer images in the frequency domain for better defect detection

RESEARCH

MIT Computer Science and Artificial Intelligence Laboratory (CSAIL) — **Cambridge, MA**

➔ **Robot Locomotion Group** - PI: Russ Tedrake — **Jan. 2022 - present**

- Fusing system identification and supervised learning methods to train a perception system that understands the physical properties of objects for robotic manipulation
- Estimated the mass, center of mass, and inertia tensor of manipulated objects during pick-and-place trajectories using the Drake simulation pipeline
- Reviewed methods for identifying payloads on robotic arms and learning physical properties from 2D images

➔ **Distributed Robotics Laboratory** - PI: Daniela Rus — **Spring 2019**

- Designed a new path planning algorithm for a robot equipped with a drill and jigsaw for autonomous wood cutting in Python

LEADERSHIP

Teaching Assistant — **Sept. 2021 - present**

Introduction to Programming in Python

- Guided 500 first-time programming students with assignments in both in-person and remote office hours
- Graded student work both manually and by giving students oral assessments
- Designed and debugged problem set questions

MIT Sport Taekwondo

President, Vice President, Treasurer — **Jun. 2018 - Jun. 2021**

- Encouraged team cohesion among 50 athletes both in-person and remotely, planned tournaments, communicated with other teams to host events**,** budgeted for the year, processed reimbursements, purchased transportation

SKILLS

- **Programming languages:** Python (high proficiency), Java (high proficiency), C/C++ (med. proficiency), MATLAB (med. proficiency)
- **Other Skills:** Git, Unix, PyTorch, computer vision, dynamics/control theory, Drake, ROS, soldering/wiring, signal processing, Spanish