

EDUCATION

M.S. Robotics - GPA: 3.56/4.00 Aug. 2016 - May 2018
University of Michigan - Ann Arbor, MI

B.S. Electrical Engineering - GPA: 3.53/4.00 Aug. 2011 - May 2015
Case Western Reserve University - Cleveland, OH

LANGUAGES AND LIBRARIES

Languages: Python, Matlab, C++, C **Libraries:** Tensorflow, Keras, PyTorch, OpenCV, SkLearn, ROS

EXPERIENCE

Research Assistant - EECS, University of Michigan, Ann Arbor, MI May 2017 - May 2018

- Worked with Dr. Jason Corso on multimodal learning, and deep network model compression and selection
- Studied VGG16 performance on a range of classification tasks after successive structural reductions
- Led development of Team Michigan's DARPA D3M library and contributed VGG and ResNet models
- Developed a learning framework to predict a robot's path given language commands and map images

Instructor - Robotics, University of Michigan, Ann Arbor, MI Jan. 2017 - Jan. 2018

- Instructed the Robotic Systems Lab course with Dr. Ella Atkins, Dr. Peter Gaskell, and Dr. Shai Revzen
- Developed robots and software, and taught topics including perception, SLAM, control, and kinematics
- Robotics Department nominee for the Towner Prize for Outstanding Engineering GSIs

Research Engineer - EECS, University of Michigan, Ann Arbor, MI Oct. 2015 - Aug. 2016

- Supported research and developed lab infrastructure in Dr. Jason Corso's Computer Vision lab
- Designed and built a mobile robot using a Jetson TX1 for learned multimodal navigation
- Created and maintained a lab computing cluster and extensible 100TB+ server for deep learning

COURSE PROJECTS

2D/3D Bounding Box Detectors: Special Topics on Autonomous Driving

- Implemented SSD, FRCNN, and Multibin for 2D and 3D bounding box detection on KITTI and the simulated Driving in the Matrix Dataset

Pascal VOC Image Segmentation: Advanced Computer Vision

- Implemented FCN with Resnet extension to perform segmentation on the Pascal VOC Dataset

SURF Visual Odometry: Special Topics on Autonomous Driving

- Generated a 3D point cloud map from stereo images in the KITTI dataset

SLAM: Robotic Systems Lab

- Implemented MCL and occupancy grid SLAM in C on a robot to safely explore an area

Robotic Sorting: Robotic Systems Lab

- Created an object detector, gripper, and kinematic solver for rapid object sorting. Placed first among 15 teams after sorting 5 objects in 8 seconds.

PUBLICATIONS

Theodore S. Nowak and Jason J. Corso. Deep Net Triage: Analyzing the Importance of Network Layers via Structural Compression. *ArXiv*, 2018.

Thomas P. Ladas, Chia-Chu Chiang, Luis E. Gonzalez-Reyes, Theodore S. Nowak, and Dominique M. Durand. Seizure reduction through interneuron-mediated entrainment using low frequency optical stimulation. *Experimental Neurology*, 269:120–132, 2015.

NON-TECHNICAL SKILLS

Languages: English, Spanish (Fluent), German (Elementary)

Minors/Focuses: Spanish, Physics / Middle Eastern History, Public Policy, AI Ethics