

# Theodore Stein Nowak

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<b>Date of Birth</b>	14 August, 1993	<b>Email</b>	tsnowak@umich.edu
<b>Nationality</b>	USA	<b>GitHub</b>	tsnowak
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## Personal Profile

I am interested in continuing to work at the intersection between Machine Learning, Computer Vision, and Robotics. Specifically, I am most interested in opportunities performing 3D reconstruction and multi-sensor inference and reasoning on robust, real-world platforms.

## Education

<b>2016-2018</b>	<b>M.S. Robotics - University of Michigan, Ann Arbor</b> Graduate Student Instructor - Graduate Robotics Systems Lab (ROB 550) Graduate Student Research Assistant - Corso (COG) Lab Officer - Robotics Graduate Student Council Robotics Representative - Graduate Student Advisory Committee
<b>2011-2015</b>	<b>B.S. Electrical Engineering - Case Western Reserve University</b> Minors: Physics, Spanish Teaching Assistant - Introduction to Circuits (ENGR 210) Research Assistant - Case Western Reserve Neural Engineering Center Organization Affiliations - CWRU Baja SAE, APO, La Alianza, Case Hockey, HKN

## Recent Employment History

<b>Jan. 2017 - Jan. 2018</b>	<b>Graduate Robotics Systems Lab</b> <i>Graduate Student Instructor</i>  With two faculty co-instructors, I taught the Graduate Robotic Systems Lab course (ROB 550) at the University of Michigan. I helped prepare and present lectures, prepare the course plan and labs, make robots, write code, and lead lab sections. Labs included a 3D camera guided 6-DOF robotic manipulation lab; a two wheel inverted pendulum navigation and control lab; a mobile ground robot SLAM and exploration lab; and an autonomous drone object grasping and delivery lab. For my work I was nominated by the Robotics Department for the Towner Prize for Outstanding Engineering GSIs.  <b>Tags:</b> C, C++, python-2.7, sh/bash, Solidworks, Inventor CAD
<b>Oct. 2015 - Aug. 2016</b>	<b>Corso (COG) Lab, University of Michigan, Ann Arbor</b> <i>Engineer in Research</i>  I created a mobile robotic Computer Vision platform to engage in learned, spatial localization and navigation. I additionally designed and managed a lab computing cluster, our lab workstations, our lab 3D printer, and our extensible 100+TB lab storage server.  <b>Tags:</b> C, C++, python-2.7, sh/bash, Solidworks

## Publications

- [1] Theodore S. Nowak and Jason J. Corso. Deep Net Triage: Analyzing the Importance of Network Layers via Structural Compression. *ArXiv*, 2018.
- [2] 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.

## Recent Prior Research

### Jan. 2018 - Language Guided Localization

May 2018 *Graduate Student Research Assistant - Corso (COG) Lab*

I helped design a framework to interpret joint lingual and visual percepts to predict a desired path in a maze.

**Tags:** python-2.7, Tensorflow, Keras

### June 2017 - DARPA D3M: Data Driven Discovery of Models

Jan. 2018 *Graduate Student Research Assistant - Corso (COG) Lab*

Large-scale ( 20 teams) DARPA funded project to create a pipeline automating Machine Learning method selection and implementation. I created the first version of the University of Michigan's project library for D3M, contributed implementations of state of the art image recognition methods, and participated in a "hackathon" with other teams in Washington, D.C.

**Tags:** python-2.7, python-3, Tensorflow, Keras, Git

### May 2017 - Deep Network Compression

Jan. 2018 *Graduate Student Research Assistant - Corso (COG) Lab*

I investigated applying naive DNN structural modifications to a variety of networks and data sets in search of underlying trends between network efficacy, network structure, and data complexity. Work was submitted to IJCAI and ICLR, and settled on Arxiv.

**Tags:** python-2.7, pytorch, Tensorflow, Keras, Git

## Recent Personal Projects

### June 2016 - Usync: Personal Dropbox

May 2018 I created my own cloud server system. The framework automatically syncs my files between laptops and this server differentially. I've publicized this effort on GitHub for others to enjoy.

**Tags:** sh/bash

## Recent Scholarships, Awards, and Recognition

### Oct. 2017 Towner Prize for Outstanding Engineering GSIs

*Robotics Department Nominee*

## Miscellaneous

**Languages:** English (Native), Spanish (Fluent, Secondary), German (Elementary)

**Other Projects:** Kaggle: Donors Choose, Coursera, Networking Scripts, Personal Website

**Other Interests:** Public Policy/Robotic & AI Ethics, Field Robotics, International Policy & Conflict, Teaching

**Recreation:** Soccer, Trail & Through Running, Orienteering, Backpacking, Sailing, Low-Budget Travel

## Primary References

<b>Name</b>	Ella Atkins
<b>Company</b>	University of Michigan
<b>Position</b>	Robotics Institute Chair
<b>Contact</b>	ematkins@umich.edu
<b>Association</b>	Co-Instructor ROB 550

<b>Name</b>	Peter Gaskell
<b>Company</b>	University of Michigan
<b>Position</b>	Lecturer
<b>Contact</b>	pgaskell@umich.edu
<b>Association</b>	Co-Instructor ROB 550