# Theodore Stein Nowak


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| **Address** | 510 N. State St.<br>Ann Arbor, MI 48104 | **Mobile Phone** | +1-(210)-818-0309 |
| | | **Email** | tsnowak@umich.edu |
| **Date of Birth** | 14 August, 1993 | **GitHub** | tsnowak |
| **Nationality** | USA | **Website** | www.theodorenowak.com |


## Personal Profile

I am interested in interdisciplinary applications of Machine Learning, Computer Vision, and Robotics, especially those involving and promoting historical and natural conservation, social equality, international politics, and outdoor exploration.

## Education

**2016-2018** **M.S. Robotics - University of Michigan, Ann Arbor**
GPA: 3.56
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

**2011-2015** **B.S. Electrical Engineering - Case Western Reserve University**
Minors: Physics, Spanish
GPA: 3.53
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

**Jan. 2017 - Jan. 2018** **Graduate Robotics Systems Lab**
*Graduate Student Instructor*

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.

**Tags:** C, C++, python-2.7, sh/bsh, Solidworks, Inventor CAD

**Oct. 2015 - Aug. 2016** **Corso (COG) Lab, University of Michigan, Ann Arbor**
*Engineer in Research*

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.

**Tags:** C, C++, python-2.7, sh/bsh, Solidworks

## Publications


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

[2] Thomas P. Ladas, Chia-Chu Chiang, Luis E. Gonzalez-Reyes, Theodore 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 - May 2018** **Language Guided Localization**
*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 - Jan. 2018** **DARPA D3M: Data Driven Discovery of Models**
*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, python3, Tensorflow, Keras, Git

**May 2017 - Jan. 2018** **Deep Network Compression**
*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 - May 2018** **Usync: Personal Dropbox**
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/bsh

## 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

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| **Name** | Ella Atkins |
| **Company** | University of Michigan |
| **Position** | Robotics Institute Chair |
| **Contact** | ematkins@umich.edu |
| **Association** | Co-Instructor ROB 550 |

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|---|---|
| **Name** | Peter Gaskell |
| **Company** | University of Michigan |
| **Position** | Lecturer |
| **Contact** | pgaskell@umich.edu |
| **Association** | Co-Instructor ROB 550 |