# Zilin Wang

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## EDUCATION

**UNIVERSITY OF MICHIGAN | GPA: 4.00/4.00** August 2021 - Present
M.S. Computer Science & Engineering Ann Arbor, MI

**THE OHIO STATE UNIVERSITY | GPA: 3.947/4.00** August 2017 - May 2021
B.S. Computer Science & Engineering (AI track) Columbus, OH

- Honors and Distinctions: Summa Cum Laude; Dean's List seven semesters consecutively

## TECHNICAL & SOFT SKILLS

- **Math & Statistics**: Advanced Linear Algebra; Probability and Random Process; Ordinary and Partial Differential Equations; Higher Mathematics; Multivariate Calculus
- Python(fluent), Java(fluent), C/C++, Julia, MATLAB, JavaScript, Scheme, SQL, HTML/CSS, Ruby
- PyTorch(preferred), Tensorflow, Seaborn, Ruby on Rails, Wireshark, Mathematica, Solidworks

## PROJECT EXPERIENCE

**External Wrench Recovery Using Visual-Tactile Sensors for Robotics Manipulation** September 2021 – December 2021
*Advisor: Prof. David Fouhey, Report: same title*

- Buit the first dataset collected from the interaction of the robot with ground truth force data measured from an external sensor.
- Presented an algorithm to estimate the external forces applied to a robotic manipulator equipped with visual-tactile sensors.

**Inspecting Ultrasound Image of Unborn Fetus by Deep Learning Integrated System** May 2021 – July 2021
*Supervisor: Prof. Ningbo Zhu, Website: ddxx56.com:5000*

- A general classifier(yolov5) was trained on raw images gathered from hospitals in Shenzhen to recognize which organ they represent.
- A more sophisticated model with visual reasoning components(module network) were trained to assess the quality of raw images.

**Adaptive Optics-Scanning Laser Ophthalmoscopy Image Analysis Using Deep Learning** January 2021 – April 2021
*Faculty Leader: Prof. Rajiv Ramnath, Report: "AO-SLO Image Analysis – Cone/Rod Recognition"*

- Utilized deep learning models, specifically Unet/Unet++ and ordinary CNN, to present AI based solutions for identifying retinal diseases.
- Upon finishing, doctors can diagnose diseases more easily and accurately.

**Verifying the Learnability of Bounded-Convex-Lipschitz Problem** November 2020 – December 2020
*Advisor: Prof. Raef Bassily, Report: "Project: Stochastic Gradient Decent"*

- Given two scenarios of different domain and feature space, implemented stochastic gradient descent algorithm for logistic regression.
- Analyzed the M-bound and $\rho$-Lipschitz of each scenarios, and proved the estimate of expected excess risk is up bounded.

**Sarcasm Detection on News Headlines** October 2020 – December 2020
*Advisor: Prof. Huan Sun, Report: "Exploring Sarcasm Detection on News Headlines"*

- Designed an n-gram model with sentiment features, and an RNN fed with pre-trained and self-trained word embeddings
- Proposed to regard sarcasm detection as a question-answering problem rather than a classification problem.

## ACADEMIC EXPERIENCE

**University of Michigan** September 2021 – December 2021
*Instructional Aide, Applied Machine Learning, School of Information, Supervisor: Prof. Kevyn Collins-Thompson* Ann Arbor, MI

**THE OHIO STATE UNIVERSITY** January 2020 - May 2020
*Grader, Intro to AI, Department of Computer Science and Engineering, Supervisor: Prashant Serai, Joseph Barker* Columbus, OH

## PROFESSIONAL EXPERIENCE

**Hunan Infopass Information Technology Co. Ltd.** June 2018 - August 2018
*Intern, Technology Department, Intelligent Transportation Systems for Changsha and Wuhan* Changsha, China

- Trained a MCNN model for estimating crowding levels in subway trains in two of China's provincial capitals.
- Tested suitability of images from the train's surveillance cameras for the training dataset by writing test-runs in Python, and drafted guidelines for training dataset selection.

## ACITVITIES & INTEREST

- CITI program certification: Responsible Conduct of Research (biomedical), Human Subjects Protection (biomedical)
- 2018 OSU Hackthon (Team Leader)
- Organized basketball games at least once per week at RPAC, The Ohio State University.
- Interest: Basketball, Badminton, Pool, Ping-Pong, Fishing, Cooking, Skateboarding
- Language: Mandarin (native), English (TOEFL MyBest scores 109)