Zilin Wang

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EDUCATION

UNIVERSITY OF MICHIGAN | GPA: 4.00/4.00 August 2021 – December 2022(expected)
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), Summa Cum Laude Columbus, OH

TECHNICAL SKILLS

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

PROJECT EXPERIENCE

Pulmonary Artery-Vein Separation in 3D Computed Tomography Images January 2022 – Present
Advisor: Dr. Sundaresh Ram
- Aims to distinguish arteries from veins that are two types of vessels and are visually similar to each other.
- Trained a graph convolutional network to perform classification on the small number of labeled images.
- Developing models that learn from the much larger number of unlabeled images by self-supervised/semi-supervised approaches.

External Wrench Recovery Using Visual-Tactile Sensors for Robotics Manipulation September 2021 – December 2021
Advisor: Prof. David Fouhey, Report: same title
- Built the first dataset of soft visual-tactile contact images and the corresponding wrench applied to a robot manipulator.
- Presented an algorithm that uses optical flow to estimate external wrench from images taken by 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
- Performed classification and object detection on raw images to tell which organ they represent and recognize specific parts of the organ.
- Proposed a post-processing step for spatial reasoning to help rate the imaging quality.

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 semantic segmentation approaches to recognizes Cones and Rods from retinal AO-SLO images.
- Designed a lightweight fully convolutional network that is data efficient and performed on par with Unet/Unet++.

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 ρ-Lipschitz of each scenario, and proved the estimate of expected excess risk is up bounded.

ACADEMIC EXPERIENCE

University of Michigan

Student Researcher, C. Galban Lab, Michigan Medicine November 2020 – Present
- Supervisor: Dr. Sundaresh Ram, Dr. Craig J. Galban Ann Arbor, MI
- Working on medical image (3D Computed Tomography) segmentation problem, please refer to projects for details

Instructional Aide, SI670 - Applied Machine Learning, School of Information Fall 2021
- Supervisor: Prof. Kevyn Collins-Thompson Ann Arbor, MI

THE OHIO STATE UNIVERSITY

Grader, CSE3521/5521 - Introduction to Artificial Intelligence, Department of Computer Science and Engineering Spring 2020
- 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.

Other Information

- CITI program certification: Responsible Conduct of Research (biomedical), Human Subjects Protection (biomedical)
- Language: Mandarin (native), English (TOEFL MyBest scores 109)