

Qin Wang

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EDUCATION

Carnegie Mellon University

B.S. in Computer Science;
Concentration in Machine Learning
Aug 2021 – May 2024
GPA: 4.0

HONORS & AWARDS

2021-2022 - Dean's List with High Honors

2022 - Tapia Conference 2022
Scholarship



2022 - Summer Undergraduate
Research Apprenticeship

2020 - The Singapore Science and
Engineering Fair, Gold

2018 - Singapore National Olympiad in
Informatics, Silver

2018 - Singapore Mathematical
Olympiad, Silver

LINKS

 <https://github.com/Bread-wq>
 www.linkedin.com/in/qin-wang-alicia

COURSEWORK

11-485 - Intro to Deep Learning

15-330 - Intro to Computer Security

15-213 - Intro to Computer Systems

15-150 - Functional Programming

15-195 - Competition Programming

SKILLS

Languages

Python, C, C++, MATLAB, SML, Dafny

Front-end

HTML, CSS, React Native, Django,
Bootstrap

Back-end

MongoDB, MySQL

Machine Learning

Numpy, Sklearn, PyTorch, Pandas,
Wandb, OpenCV

Data Visualization

Matplotlib

RESEARCH EXPERIENCE

CMU Robotic Caregiving and Human Interaction lab

Robotics Research Intern

March 2022 – Present

- Co-first author of paper in submission to 2023 IEEE International Conference on Robotics and Automation [Arxiv]
- Spearheaded design and creation of a wearable headband interface for controlling a mobile robot and piloted experiments to test its efficacy on 20 participants
- Created GUI using python Tkinter for video streaming via pyrealsense2 and speech recognition tool via Google Speech Recognition

Singapore A*STAR Institute for Infocomm Research

Machine Learning Intern

June 2019 – July 2020

- Co-first author of paper published in 42nd Annual International Conference of the IEEE Engineering in Medicine and Biology Society [IEEE]
- Designed and conducted experiments to collect EEG data from 25 subjects to monitor stress level after 5 stress-relieving tasks
- Performed data segmentation and bandpass filtering using MATLAB, selected features using Fisher Ratio
- Experimented with ML methods including SVM, LDA, logistic regression, trained a 4-class LDA classifier to detect stress levels

Annual High School Mathematical Contest in Modeling

Outstanding Award Winner

November 2018 & 2019

- Won top 1% paper for 2 consecutive years in HiMCM, the largest international math modeling competition for high schools
- Developed multi-objective optimization model to automatically adjust temperature of the house using autocorrelation analysis and Monte-Carlo-Tree-Search (2018 Problem B)
- Devised strategies to place charging stations in different types of venues using queuing model (python SimPy) and discretized fluid cooling model (MATLAB), tested robustness of model on real life data (2019 Problem A)

PROJECTS & ACTIVITIES

MyTorch

August 2022 – Present

- Constructing custom deep learning library for Intro to Deep Learning
- Implemented forward pass, backpropagation, convolutional layers, pooling layers, downsampling and upsampling layers from scratch

Winter Soldier

April 2022 – Present

- Conceptualized design and construction of a multi-sensor autonomous snow cleaning robot built with Jetson nano, depth camera, and IMU
- Enabled real time object detection with YOLOv5 computer vision model
- Received \$500 Small Helpful Research Grant (SHRG) from CMU robotics club

Take To Wake

September 2022

- Top 2/52 teams at HackCMU 2022, with over 200 participants
- Created gamified mobile app under 24 hours to help people get up on time by completing real life tasks using React Native, Firebase, Flask and Computer Vision

Optiver Market Making Game

March 2022

- 1st place at Optiver's Market Making Game 2022 for Price Estimation with over 150 participants
- Performed statistical and mathematical analysis to estimate intrinsic value of provided contracts and deployed trading strategies to compete against 30 other teams

RoboCup Soccer Competition

March 2017 - June 2019

- Led a team of 4 to construct 2 omnidirectional autonomous soccer playing robots, used OpenCV for fast real time detection of passive ball
- Won 1st in light weight category in 2017, 1st in heavy weight category in 2018
- Represented Singapore in RoboCup international for 2 consecutive years