Yigao Fang

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EDUCATION

University of Pennsylvania **Philadelphia, U.S.**

- M.S.E. Data Science *Aug. 2022 – Dec. 2023 (Expected)*

University of Michigan (UM) **Ann Arbor, U.S.**

- B.S.E. Computer Science | Minor. Mathematics **GPA**: 3.98/4.00 *Aug. 2020 – May 2022*
- **Coursework**: Software Engineering, Data Structures, Algorithms, Machine Learning, Operating Systems, Database Management, Parallel Programming with GPUs, Game Design and Development, Computer Vision

Shanghai Jiao Tong University (SJTU) **Shanghai, China**

- B.S.E. Electrical and Computer Engineering (ECE) **GPA**: 3.84/4.00 *Sept. 2018 – Aug. 2022*

SELECTED PROJECTS

Catalyst Rational Design through Artificial Intelligence *May 2022 – Aug. 2022*

- Founded a platform that predicts force and energy of a catalyst based on structure using Python (Mean Avg. Error < 0.30 eV).
- Innovated a pipeline that preprocesses an open database and trains an improved deep learning model on 2 million data points.

3D Horror Game: Asylum 7 *Feb. 2022 – Apr. 2022*

- Developed and published a first-person adventure game with 6 scenes based on Unity.
- Spearheaded the game's core technology mechanisms with C#, such as weapons, player movement, and trap controls.
- Organized the 3-stage (alpha, beta, gold) iterative design process and managed the researching, testing, and marketing tasks.

Birdcall Soundscape Classification *Mar. 2021 – June 2021*

- Preprocessed the audio dataset of 62.9K birdcalls and conveyed them into trainable spectrum maps.
- Strengthened convolutional neural network to analyze the spectrum and visualized the learning result with F1-score = 64.49.

Pedestrian Intention Estimation for Autonomous Driving *Feb. 2021 – Apr. 2021*

- Applied Multiple Object Tracking to extract 128 * 128 images for each pedestrian from video clips to build training dataset.
- Transformed the Net18 model into a PyTorch LSTM pipeline to estimate pedestrians' crossing-road intention with accuracy 77.5%.

RESEARCH EXPERIENCE

VR Simulation Program Based on Computer Vision, Research Intern *May 2021 – Sep. 2021*

- Generated a 256 * 256 binary graph based on de Brujin to provide a unique pattern for each 2-dimension position.
- Utilized Python to analyze images captured by the VR helmet and calculate its coordinates with degree-of-freedom up to 6.
- Imported the 6 coordinates into Unity and realized an innovative VR system with a deviation less than 0.1 mm.

EMPLOYMENT HISTORY

- **Teaching Assistant**, VP 160, Honors Physics; VE 230, Electromagnetics, SJTU *Apr. 2022 – Aug. 2022*
- **Grader**, EECS 498/598 - 008, Machine Learning for Vision, UM *Jan. 2022 – Apr. 2022*
- **Department Minister**, UM-SJTU Joint Institute Student Union *May 2019 – June 2020*
- **Club President**, Monach Drama Troupe at SJTU *May 2019 – June 2020*

SKILLS

Programming Languages: Python, C/C++, C#, JavaScript, Java, HTML/CSS, Verilog, R

Framework and Tools: PyTorch, TensorFlow, MATLAB, Linux, GitHub, Mathematica, Unity, Latex, SQLs

SELECTED AWARDS

China National Scholarship (Top 0.2%)
Yu Liming Scholarship (Top 1%)
Lum Scholarship (Top 2%)
University Physics Competition, Golden Medal
Mathematical Contest in Modeling, Meritorious Winner
University Honors & Dean's List, University of Michigan