Enhao Zhang

1760 Broadway St, Apt. 106, Ann Arbor, MI 48105

zhang-eh.github.io ✉ ehzhang@umich.edu ☎ (734)882-8895

Education

- **University of Michigan** Ann Arbor, MI
  Bachelor of Science Engineering in Computer Science *Sept. 2018 – Present (expected Apr. 2020)*
  - Overall GPA: 4.00/4.00
  - Advisors: Prof. **Michael Cafarella** and Prof. **Nikola Banovic**
  - Core Courses: Machine Learning (A), Database Management System (A+), Computer Security (A), Algorithms and Data Structures (A+), Computer Organization (A+), Operating System, Deep Learning for Vision
- **Shanghai Jiao Tong University** Shanghai, China
  Bachelor of Science in Electrical and Computer Engineering *Sept. 2015 – Present (expected Aug. 2020)*
  - Overall GPA: 3.98/4.00 **(Ranking: 1st/202)**
  - Core Courses: Linear Algebra (A+), Probabilistic Methods in Eng. (A+), Discrete Math (A+), Honors Calculus (A+), Programming & Data Structures (A+)

Honors and Awards

- **Undergraduate National Scholarship** (Top 7 students in Joint Institute), Ministry of Education of People's Republic of China, 2016
- **Distinguished Academic Achievement Award (☞ Link)** (Academic performance in the top 2% of class), Joint Institute, Shanghai Jiao Tong University, 2016
- **Interdisciplinary Contest in Modeling**, Honorable Mention, 2017
- **Overall GPA Ranking Top 1 out of 202 (☞ Link)**, Joint Institute, Shanghai Jiao Tong University, 2015 – 2017
- **Cheng Family Scholarship** (Only 2 UM-SJTU dual degree students annually), Joint Institute, Shanghai Jiao Tong University, 2018

Research Experience

- **GAN as an Art Material** Ann Arbor, MI
  Advised by Professor Nikola Banovic *Sep. 2019 – Present*
  - Design a new photorealistic image composing platform which gives users more controls over the generated image, utilizing the sketch classification and the BigGAN model.
- **Video Database Analytics System** Ann Arbor, MI
  Advised by Professor Michael Cafarella *May. 2019 – Present*
  - Researched and optimized a video database system supporting binary content-based queries, by constructing CNN classifier cascades in replace of the complex user-supplied classifier and constructing a multiresolution video dataset from the original dataset.
  - Tested the database system on a dashcam dataset and achieved 5x speedup with 5% accuracy tradeoff.
  - Implemented a graphical user interface with Streamlit for the system.

- **Economic Product Price Prediction** Ann Arbor, MI
  Advised by Professor Michael Cafarella *May. 2019 – Present*
  - Predicted prices of economic products, from highly imbalanced dataset, based on product descriptions that were not human interpretable and category names.
  - Preprocessed and cleaned data with inconsistent quality; explored different bin ranges for each category.
  - Built and fine-tuned a price predictor using LSTM for each category, with 82 categories in total.
- **Study of Personalized Active Learning** Ann Arbor, MI
  Advised by Professor Nikola Banovic *Jan. 2019 – Nov. 2019*
  - Investigated user-computer interaction in machine learning algorithms, where user provides training labels to machine-end and machine learning method realizes user personalization.
  - Designed and developed a query-based image retrieval system using active learning strategies with various functionalities, including extracting photos from user's social media account, querying images and updating alternate texts.

Project Experience

- **Substring-Searchable Symmetric Encryption** *Mar. 2019 – Apr. 2019*
  - Investigated a modern searchable encryption scheme used for databases by analyzing its security properties and potential security issues due to cryptographic implementations.
  - Simulated a client-and-server interaction where client queries a string and server returns the result using substring-searchable symmetric encryption scheme. (☞ Link)
- **Spherical Following Robot** (Patent: CN108297108A) *Nov. 2016 – Nov. 2017*
  - Proposed a spherical following robot equipped with multi-microphone annular array that realized sound source localization in a household environment, based on Time Difference of Arrival (TDOA) sound locating method. (☞ Link)
- **High-Speed Photography Assistant** *Jun. 2016 – Aug. 2016*
  - Proposed an affordable and multifunctional Arduino-based device to shoot high-speed photographs of water droplets. (☞ Link)
  - Led the team and won **Best Technology Award** out of 40 competing teams in the design expo.
  - Gave presentation at the 2016 JI Open Day as the only freshman team.

Tutoring Experience

- **TA for VY100** – *Academic Writing I*, instructed by Cynthia Vagenitti, SJTU *Fall 2016*
- **TA for VY200** – *Academic Writing II*, instructed by Cynthia Vagenitti, SJTU *Spring 2017*
- **Grader for EECS 370** – *Intro. to Computer Organization*, UM *Winter 2019*

Extracurricular Activities

- **Media Department of the Student Union**, Vice Director *Aug. 2016 – Apr. 2017*

Skills

- **Language:** Mandarin (Native), English (TOEFL iBT: R29+L27+S24+W28, GRE: V163+Q167+AW4)
- **Computer:** Python, C/C++, SQL, HTML, JavaScript, MATLAB, Verilog HDL