Edward Sun

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es2k.github.io

Education

- **University of Michigan** — Ann Arbor, MI
  Computer Science; GPA: 4.0 — *Sept 2018 – Present*
  - **Relevant Coursework**: EECS 280: Programming and Data Structures, EECS 203: Discrete Math, taking EECS 281: Data Structures and Algorithms, EECS 370: Computer Organization, MATH 214: Linear Algebra
- **Thomas Jefferson High School for Science and Technology** — Alexandria, VA
  Computational Physics Research; ACT: 35; GPA: 4.4 — *Sept 2014 – June. 2018*

Experience

- **CROMA Lab, University of Michigan** — Ann Arbor, MI
  Research Assistant — *Dec 2018 - Present*
  - **AV3D**: Utilized crowdsourcing to annotate 2D videos with dimension lines to estimate 3D objects with aggregate particle filtering. Used to train autonomous vehicles with 3D state data without need for high-cost 3D cameras.
  - **TalkToMe**: Created a new way of implementing system testing by using non-expert crowdsourced workers to write diverse dialog through word clustering to build more comprehensive task-oriented dialog systems.
- **State Key Laboratory of Novel Software Technology, Nanjing University** — Nanjing, China
  Research Intern — *June 2017 - Aug 2017*
  - **Gemo: Real-Time Crowd Analytics with Emotion Recognition on Mobile Platforms**:
    Built a mobile platform that performs real-time group emotion recognition and facial detection for crowd analytics. Achieved an accuracy 21.17% higher than baseline on test datasets and speeds 30 times faster than VGG-Face LSTM models.
  - **Awards**: Siemens Competition Semifinalist
    6th Place ACM International Conference on Multimodal Interaction Grand Challenge

Leadership

- **Michigan Hackers** — Ann Arbor, MI
  React Native Team Leader — *Sept 2018 - Present*
  - **React Native**: Launched the React Native team to teach programmers how to build cross-platform mobile apps for iOS and Android with JavaScript and Expo. Working on Maize Pages app to connect all clubs at the university.
- **TJHSST Frontiers in Science Club** — Alexandria, VA
  Founder and President — *Oct 2017 - June 2018*
  - **Teaching**: Discussed new scientific topics and discoveries. Invited guest speakers to visit and give seminars on cutting-edge research and aspiring scientists to present student research projects.

Projects

- **StockWise, MHacks 11**: Applied ML, sentiment analysis, web scraping, and web design to create a stock market assistant that predicted price movement through TensorFlow and GCP. 1st place in Goldman Sachs competition.
- **Team ⌊ ⌉, MIT Battlecode**: Wrote resource management, pathfinding, and network communication algorithms in Python to compete in a challenge that combines battle strategy, software engineering, and AI. Quarterfinalist and invited to attend Finalists' Celebration at MIT.
- **Large Band Gap Topological Insulators of Bi**: Designed heterostructures of monolayer bismuth layers to create more efficient topological insulators. Conducted ab-initio computations to model spin-orbit coupling in quantum spin hall effect. Presented research to visitors from international research institutions.
- **Spintronics Research**: Discovered new spintronics materials by hydrogenation of transition metal (V, Cr, Mn)-doped phosphorene through computer modelling with the density functional theory.

Awards

- **Siemens Competition Semifinalist**: 2016, 2017
- **National AP Scholar**: 2018
- **USA Computer Olympiad Gold Division**: 2017
- **AIME Qualifier**: 2015 - 2017
- **1st Place Fairfax County Regional Science Fair**: 2017