Michael Tao

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Texas A&M University | Honors | Class of 2024 | Junior

• B.S.: Computer science, Minor: Mathematics, GPA: 3.7

• Relevant Coursework: Data Structures and Algorithms, Engineer Lab Computation (Python), Program Design and Concepts (C++), Linear Algebra, Discrete Math, Multivariable Calculus, Statistics, Computer Organization, Programing Languages, Operating Systems

• Skills & Tools: (**Proficient**)Java, Python, C++, Microsoft Office, (**Used Before**)Numpy, SQL, HTML, Git, Assembly, VScode, VBA, R, Makefile, OpenCV, Haskell, Javascript, CSS

Experience

- **Computer Vision | TAMU Robomaster Robotics** **August 2020 - May 2021**
  | Placed 3rd in 2021 North American Robomasters competition |
  - Was a part of a team consisting of 15 dedicated developers trying to develop a robot in under a **$3000** annual budget.
  - Through **Python** and experimental datasets, the robot achieved a **96% accuracy** when it comes to robot detection.
  - Generated a **synchronous** pipeline for subsystems to communicate. Utilized **OpenCV** and **vector algebra** for object detection with noise.
- **Paycom Summer Engagement Program** **July 2022**
  - Selected by Paycom to join them in sessions to learn and work with them to gain an exponential understanding about a technical company's workforce. Got to utilize and observe **Git, PHP, React, and SQL.**
- **IHI E&C Engineering Tool Developer** **June 2021 - August 2021**
  - Developed software for structural engineers who analyze and design offshore oil & gas platforms and onshore LNG terminals.
  - Develop Excel based in house software using **VBA**. By using given design data we can perform analysis and designs
  - increase productivity from **60 - 95 percent**.
- **Kumon: After School Math & Reading Programs | Leadership** **January 2019 - February 2020**
  - Created a system to track student progress and identify areas of improvement, resulting in an average increase of **11%** in test scores.
  - Developed lesson plans based on each student's individual needs; this increased engagement and boosted confidence levels. Regularly communicated with parents about their child's progress.

Personal Projects

- **The transfer of electrocardiogram (ECG) data through a client-server relationship** **July 2022**
  - Designed a **client** and **server** utilizing **C++**.
  - The server hosts ECG data points of patients. The client side can obtain any data point from the server and obtain a file of any size.
  - Used multithreading to increase operations by **33%**. Also utilized **TCP protocol** and **sys/socket** so the server and client can reside on different machines.
- **Aggie Shell** **June 2022**
  - Utilizing **C++** I implemented my very own linux shell.
  - This linux shell in my OS lets a user navigate through the file system and performs a wide variety of tasks using a series of simple commands.
  - This includes **command pipelining, cd commands, background processes**, etc.
- **Back-end Database Management** **October 2021**
  - To combat these recent online schooling technological issues, I developed a **C++** program to **improve the storage, query, and modification efficiency of their existing structure**.
  - By using **AVL and Discord Trees,** I successfully created a rebalancing database management system.
- **Seam Carving Program** **August 2021**
  - Made a **C++** program that can take in an image and utilize a **seam carving algorithm** and energy maps to resize images.
  - Normal ways of image alteration would distort important regions, but energy maps take in the gradients and the algorithm would accomplish resize without distortion.
- **VBA Force Generation Program** **June 2020**
  - Programmed codes for engineers through the usage of **VBA** and **Excel**.
  - Gathering numerous quantifiable data in excel, I programmed calculations such as Max shear force and Max tensile force in a press of a button.

Affiliated Organizations & Awards

- **Texas A&M Craig and Galen Brown Engineering Honors:** A program where less than 10% of engineers are inducted. A place where I can continue to innovate and challenge myself.
- **Dean's Honor Award:** Awarded for rigorous curriculum and outstanding academic performance

Interests and hobbies: Weightlifting, Swimming, Concerts, Hanging out with family (there is something alleviating about playing poker with your grandparents and hearing their stories), Cross stitching, and looking into making my own clothes.