Zimeng Chai

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Basic Information

Competitive robotics team leader specialized in automation and control through combinations between software and hardware. Currently a first-year student majoring in Computer Engineering.

Other skills include rapid prototyping, troubleshooting control-oriented issues, developing workflow, and managing team development processes through platforms like GitLab. Able to maintain documents & produce reports alongside R&D. Looking for a research opportunity in Fall 2023.

Education

Georgia Institute of Technology | Atlanta, GA   *August 2023 – Present*
Bachelor of Computer Engineering   Expected Graduation: May 2027

Shanghai Pinghe School | Shanghai, CN
International Baccalaureate Diploma, GPA 4.00   September 2020 – May 2023

Relevant Coursework

Currently Taking: Introduction to Object-Oriented Programming (Java Introduction), Linear Algebra (Finishing December 2023)
Planning to Take: Data Structure & Algorithms, Introduction to Signal Processing, Differential Equations, Multivariable Calculus, Digital System Design (Finishing May 2024)

Skills

Programming: Python, C++, C(Arduino), Java, JavaScript, HTML, CSS
Platforms: Linux (Ubuntu, Debian)
Hardware: Raspberry Pi, Rockchip, Arduino
Software: GitHub, GitLab, Onshape, SolidWorks (Basics), Microsoft Office
Communication: Technical Documentation and Reports, Technical Presentations
Languages: English (Proficient), Mandarin (Native)

Experience

RoboNav - Robojackets Robotics Club | Georgia Institute of Technology | Team Member   *September 2023 - Now*
- Member of the software team, working on the University Rover Challenge. Writing code under ROS2 using C++ and Python, utilizing knowledge in multithreading, control theories, and software design practices.
- Responsible for programming the software-hardware interface and the arm planning system.

Robotics Club | Shanghai Pinghe School | Team Leader   *March 2021 – August 2023*
- Programmed and debugged 3 120lb-level robots each with 3,000+ lines of Java using basic control loops, feedback and model feedforward, and vision processing with HSV filtering, winning 2 competition champions and 1 autonomous award.
- Trained a yolov8 nano model, deployed on a Rockchip 3588 platform, utilizing NPU to reach 20 FPS under 640x640 input.
- Wrote and maintained a team website for 1 year, written in Django, using MySQL as its backend, deployed on Vercel.
- Led a team with over 60 members over 3 years. Launched 3+ sponsored events along with ~$10,000 fund per year.
- Maintained documentation with over 10 sections & 10k+ words for more than 2 years.
- Maintained the team's GitLab platform for 1 year, using CI/CD to check errors and line, code reviewed more than 5 peers.

AI Mini Project | Utech Academy Summer School | Team Leader   *July 2021 – August 2021*
- Generated an AI model to recognize 7 types of facial emotions using Keras and Pytorch, properly pruned to have 80%+ accuracy and sub-30ms inference time for under 5 faces.
- Wrote a webpage to show the result to the audience interactively.

Wharton Investment Competition | Shanghai Pinghe School | Team Leader   *September 2020 – October 2021*
- Virtually managed $100,000 for a targeted client, reached 50% return in 2 months.
- Utilized Python, Scrapy, MongoDB, and MySQL to automatically crawl and download 500+ companies' stock data from 5 countries within 5 minutes. Generated index to automatically choose investment targets.