Yuqing Gu

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EDUCATION BACKGROUND

The University of Illinois at Urbana- Champaign, Illinois, US

Bachelor of Computer Engineering, Expected Dec. 2025

- James Scholar, Dean's List
- GPA:3.91/4.0
- Relevant coursework: Computer Science Engineering, Digital Signal Processing, Data Structures

WORK EXPERIENCE

Embedded System Engineer, IML May. 2024- Aug. 2024

- Developed a control system using Jetson and Arduino to automate excavator movements via real-time API communication
- Implemented PWM and PPM control algorithms using H-bridge for precise motor control, enabling forward and reverse operations, and integrated IMU sensor data for adaptive performance
- Optimized communication for low-latency control by improving accuracy and efficiency and reduced response time to ~50 milliseconds

Student Coordinator, AI4ALL Feb. 2024- May.2024

- Facilitated/assisted with AI4ALL Ignite events including program launches, portfolio projects, student symposiums, office hours, and workshops
- Gave hands-on experiences in AI and ML which include Data visualizing, Supervised and Unsupervised Learning, CV, NLP, and RL. Etc.
- Assisted around 20 AI4ALL Ignite students in finishing their projects

Class Assistant/ Grader, ECE220 Feb. 2023- May. 2024

- Evaluated student assignments and provided constructive feedback on programming projects, ensuring adherence to coding standards and project requirements.
- Demonstrated proficiency in LC-3, C programming, data structures, and algorithms, as well as an understanding of object-oriented design principles and modern software development practices

Projects

Embedded Elderly Fall Prevention Device, Designer Dec. 2023- Jan. 2024

- Designed a device to detect elderly falls and alert to ensure elderly safety with STM32F
- Use MPU6050 to detect the acceleration and angular and transfer it with the I2C protocol
- Analyze with Kalmam protocol and display the pitch and roll angle with OLED, and blink with a small PWM light when danger threshold is exceeded
- Successfully debugged 15+ and completed the project

BCI RC Car, Designer, *Illini Vex Robotics* Aug. 2023- Dec. 2023

- Designed a car controlled by EEG brainwaves to improve treatment for neural motor disabilities
- Used Neurosity headset to capture motion cortex signals and trained a model to discriminate different signals
- Utilized Raspberry Pi to convert various signals into the control of the car's steering and start or stop movement
- Orchestrated over 20 meetings and achieved great advancements

Apply AI, Conductor, *AI4ALL* Aug. 2023- Dec. 2023

- Modeled the housing market and the different factors that may influence availability and pricing
- Used Random Forest, Decision Tree, Gradient Boosting, etc. to identify the most effective for predicting house price and Employed MySQL Workbench to visualize the outcomes
- Culminated in reliable models with a RMSE of 7.24 and a successful representation

AI Video Convertor Based on ControlNet, Designer, *HackIllinois* Feb. 2023

- Conceptualized and crafted a video converter capable of transforming self-recorded and standard MMD videos into diverse styles, seamlessly transitioning between anime, realistic, and other styles within just 36 hours
- Employed Python, Java, and JavaScript APIs to automate the video-to-frame process, converting each frame into AI-generated artwork with stable diffusion and ControlNet, and then reassembled them into a video format
- Successfully brought to life a fully functional website by leveraging Python servers such as Flask and seamlessly integrating with a Vue frontend

Refreshable Braille Display, Team Lead, *ECE 120 Honors Lab* Feb. 2023-Apr. 2023

- Developed a Braille display for visually impaired individuals using Arduino, solenoids, and transistors
- Utilized Arduino to capture user input, including numbers and alphabets, and generate signals to operate the circuit
- Implemented a logic system to control the activation of solenoids and finalized the design
- Championed the successful Braille text display upon user input after over 30 debugging sessions

Human vs. Machine Foosball Table, Team Lead, *ECE 110 Honors Lab* Aug. 2022- Dec. 2022

- Crafted a foosball table equipped with ultrasonic sensors, linear servos, and rotational servos
- Employed sensors to measure the ball's proximity to the ultrasonic sensor and programmed the Arduino to calculate precise horizontal movements for positioning the figures in front of the ball
- Utilized over 10 linear and rotational servos to manipulate rods and control ball movement.
- Successfully enabled our foosball table for human-machine gameplay

EXTRACURRICULAR ACTIVITIES

Journey International Ministry, treasurer Aug. 2022-Present

- Manage all financial aspects of the organization, including budgeting, accounting, and financial reporting
- Collaborate with other board members and ministry leaders to align financial strategies with organizational goals and priorities

Mimosa Aug. 2022-Aug.2023

- Practices K-pop dance twice a week and forms different dance groups for different songs
- Performs in the Chinese New Year festival, boba festival, quad day, etc. and films mv

Girls Who Code Aug. 2022-Dec. 2022

- Educated girls in secondary school on computer programming to closer the gender gap in the field of technology
- Programed code websites and apps to address problems in communities

SKILLS

- **Coding**: C/C++, Python, Java/JavaScript, SQL, HTML
- **Tech Stack**: STM32. Simulink, Linux, Git, MySQL, Pandas, Numpy, Arduino
- **Microsoft Office Skills**: PowerPoint, Word, Excel, Word
- **Language**: English- Full professional proficiency, Chinese- Native