Bryan Chang

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EDUCATION

University of Illinois at Urbana Champaign May 2025

Bachelor of Science in Computer Engineering GPA: 3.81/4.0

Dean's List: 2022 Spring, 2022 Fall

Related Coursework: Signal Processing, Computer Systems & Programming, Internet of Things, Data Structure, Operating Systems

SKILLS

Programming Language: Java, C, C++, Python, LC-3, x86

Tools: Fusion 360, tinkerCAD, git, KiCad, Bluetooth protocol, TensorFlow, AWS, GNU Radio

Interpersonal: Customer service, teaching & training. Native proficiency in **English** and **Mandarin**

PROJECTS & EXTRACURRICULAR ACTIVITY

Undergraduate Research Assistance | Python, GNU Radio, Machine Learning Champaign, IL | 2023 Nov–Present

- Developing test bench for Prof. Matthew Caesar's Anti-jamming project using Software Defined Radio by utilizing GNU Radio.
- Researching on training a 3D detection model for mm Wave data sets and creating API for mmWave sensors for Prof. Matthew Caesar's mm Wave project.

Hydrologic | C++, AWS, KiCad, IoT, git Champaign, IL | 2023 Nov–Present

- Developed a water meter leveraging esp32 technology to capture and analyze water usage data across UIUC dormitories with the intention of contributing to campus sustainability goals by visualizing water usage data and aiming to reduce overall water consumption.
- Used C++ to develop a backend service that seamlessly connects an AWS database with IoT devices and mobile applications.
- Collaborated with the front-end team to create a user-friendly mobile application that reports real-time water consumption data.
- Utilized KiCad for the design of a Printed Circuit Board, seamlessly integrating the ESP32 microcontroller within the product's casing.

Heart-Rate Controlled Fan Project link **|** C++, IoT, Bluetooth protocol, Fushion360 Champaign, IL | 2021 Aug–Oct

- Developed a heart monitor-controlled fan system, to address discomfort and inefficient cooling in indoor cycling workouts. This system dynamically adjusts fan speed based on the user's heart rate in real-time, optimizing comfort and performance.
- Implemented Bluetooth protocol using C++ to facilitate communication between the heartrate sensor and the ESP32 microcontroller.
- Designed an I/O interface consisting of buttons and switches that allows the user to adjust the different modes of the fan.
- Used Fusion 360 to design the outer casing of the Heart-Rate Controlled Fan

Illini VEX Robotics | Python, TensorFlow, Machine Learning Champaign, IL | 2021 Aug–Dec

- Collaborated with a 6-person team to research and implement an image recognition application as part of the Ball Balancing Project.
- Successfully implemented PID control for the servo motor, utilizing image data analysis to achieve precise ball balancing on a surface.
- Utilized python's TensorFlow library to incorporate Image Recognition capabilities for the system to fetch the location of the ball.
- Developed a Reenforced Learning algorithm in python to perform the ball balancing feature.

EXPERIENCE

Bike Lab by Neutral Cycle | *Bike Mechanic* | *Shop Manager* Champaign, IL | Aug 2022–Present

- Consulted with an average of 20 customers per week regarding products and services, providing recommendations and generating sales.
- Executed an average of 10 bicycle repairs, part replacements, tune-ups, and general maintenance tasks weekly.
- Train new mechanics, provide hands-on guidance and share expertise in bicycle repair and maintenance.

Amos Kids | *Interim Teacher* Taipei, Taiwan | Jun 2018–Aug 2020

- Designed and executed a two-week summer STEM camp for middle school students, featuring a curriculum that integrated coding with hands-on experiences using IoT devices such as Raspberry Pi.
- Employed a dynamic teaching approach, breaking down complex coding concepts into digestible units while using real-life metaphors to enhance understanding.

AWARDS & LEADERSHIP

International Schools Cyberfair Golden Award | *Team Captain* Taipei, Taiwan | 2018 Sep–2020 Sep

- Led a 10-person team in developing two research websites focusing on vanishing traditions(2020) and stray animals(2019).
- Produced compelling interview videos to enhance the presentation and storytelling of the research projects, offering a personal and relatable perspective on the issues explored.