# Bronson Ianno

## Links

**GitHub:** [bxi23](https://github.com/bxi23)

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Pittsburgh, PA

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### Education

The Pennsylvania State University – University Park

BS Computer Science 2023

GPA 3.86 Cum Laude

Minor in Computer Engineering

Minor in Mathematics

Exploratory Engineering Background:  
Aerospace/Mechanical Engineering

Computer Engineering  
Engineering Science

### Activities:

PSU Robotics Club 2019- 2021

HackPSU Organizer 2022- 2023

### Skills:

Python, Java, JavaScript, TypeScript, C, C++, SQL, HTML, CSS, MATLAB, C#

Frameworks:   
AWS, React, React Native, Expo, Django, .Net 9, .Net WPF, Asp.Net Core, Flask, Node.js, Expo, ROS2

### Tools:

Figma, SolidWorks, FreeCad, Multisim, Postman, Insomnia, Visual Studio, Wireshark, DB beaver, Git, VS Code, AWS CLI

### Coursework:

Applied Computational Methods

Wireless Comms and Security

Linux System Programming

Circuits and Devices

Computer Vision

Computer Architecture

### Certifications:

AWS Cloud Practitioner

Meta Back-End Developer

Meta Front-End Developer

## **References**

**Thomas Kolb**, President, Asset Management Group, Enghouse Systems, *thomas.kolb@enghouse.com*

**John Choi**, Research Engineer, Carnegie Mellon University, *johnchoi@andrew.cmu.edu*

**Jeffrey Scott**, CEO and Founder, IAMotion, *jeff@iamotion.com*

Work Experience:

**Automation Engineer @ IAMotion Products**| Murrysville, PA| Jan 2024 - Present

* Design and develop **automation** **solutions** based on customer requirements.
* Work with the development of software for motors and PLCs.
* Manage distribution of automation products.
* Developed **Full**-**Stack** cross-platform app to integrate with robot, run automation, and manage user-created entries. (**Expo**, .**Net9** **Asp**.**Net** **Core**, **ROS2**) (active)

**Software Engineering Intern @ Carnegie Robotics**| Pittsburgh, PA| Jan 2022–Aug 2022

* Assisted in design, development, and testing of **robotics** **software** applications
* Wrote **OpenCV** scripts in **Python** to assess camera systems for QR code reading
* Implemented feature enhancements to **Robot** **Camera** **Payload** system codebase

## Projects:

**Full Stack Fitness App** ***(Expo, .NET 9, MySQL, AWS, BLE IMU)***| Personal Study – Project

A connected fitness app featuring real-time sensor streaming, user-generated content, responsive cross-platform UI, and social interaction. Built with an **Expo** front-end and a .**NET 9** (**ASP.NET Core**) back-end using **MySQL**, with planned deployment to **AWS**.

* **App Development | Key Contributions (Limited for Robotics Resume)**
  + Developed a cross-platform mobile app using **React Native + TypeScript** in **Expo**
  + Designed modular **JWT authentication system** supporting secure, stateless API interactions.
  + Integrated **.NET 9 RESTful API** with secure operations and persistent user data via **MySQL**.
  + Used **Axios, React Query,** and **RxJS** for data fetching, live updates, and back-end syncing.
* **Back-End Development | Key Contributions**
  + Designed a scalable **MySQL** database schema using **Entity** **Framework** **Core**, supporting user authentication, profiles, workout planning, and activity tracking with flexibility for future platform migration.
  + Developed a **modular RESTful API** using the **ASP.NET Core MVC framework**, with multiple controllers handling categorized CRUD operations across the app’s core features.
  + Created structured **DTO models** to validate and sanitize incoming requests, ensuring consistent and secure data flow between client and server.
  + Integrated **Swagger UI middleware** to auto-generate API documentation and support streamlined developer testing and iteration.
* **Sensor Integration and Sensor Fusion | Key Contributions**
  + Calibrated **BLE IMU** sensor using **Python** with **WitMotion** **SDK** and **Bleak** for BLE connectivity, performing sensor fusion via **PyFilter** and **IMUFusion** to extract accurate orientation and motion data.
  + Built a controlled calibration environment using an **Animatics M5 Smart Motor** on a linear actuator to generate repeatable reference motion for fusion accuracy. Developed Smart Motor code using **Animatics SDE**.
  + Reverseengineered **Python-**basedcalibrationandfusionlogicinto **TypeScript**, enabling native real-time motion analysis directly within the Expo app environment.

**Linux-Based OS Concepts - Design and Implementation** | University Study

* Designed and implemented core operating system functionalities using **C++.**
* Applied paging and memory replacement algorithms for data transfer integrity.
* Wrote a **multithreaded** CPU scheduler for synchronizing multiple **IO devices**.
* Built File System with pathname resolution, symbolic linking, nested directories, memory allocation of data blocks, and secure handling of name collision.

**Robotics Control Experimentation** **(C++, Arduino, Embedded Systems)** | Personnel Study

* Designed control system using **NEMA 17 stepper motors** and **stepper drivers** via **Arduino Uno +** breadboard, writing **C++** programs to handling **motor** **control** and **I/O** **integration**.
* Connected and tested various I/O components (buttons, potentiometers, sensors) to create responsive motion control systems.
* Focused on developing foundations for future development with an **educational robotic arm system** developedby **Choi Tek**.
* Gained hands-on experience with **low-level hardware programming**, **motor driver tuning**, and **motion sequencing** for robotics applications.