James Ding

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💼 Experience

FIRST Robotics - Team 2204 Rambots Sep 2020 – present
Team Captain, Build Captain, Programming Lead, Member Hayward, CA

Worked closely with other subteam leaders to coordinate and oversee team activities, including CAD/programming work and project management. My leadership and communication skills were essential to ensuring that our team operated effectively and efficiently throughout the seasons. Other responsibilities include

- Directing team meetings and facilitating critical decision-making processes
- Fostering an approachable learning environment for other students
- Serving as the primary point of contact and liaison between our team and mentors

UC Berkeley's College of Engineering, EECS Department 🔗 Jun 2023 – Aug 2023
Academic Intern Berkeley, CA

Lab Section TA for a class of 450 college students; prepared and gave mini-lectures to reinforce and review lectures. Guided and discussed challenging problem sets as a high school student for COMPSCI 61A: Structure and Interpretation of Computer Programs

Quimbee 🔗 May 2022 – Aug 2022
QA Automation Intern Remote

Secured internships through my parents, where my responsibilities included:

- Developing end to end (E2E) multiplatform automated tests with Detox and Selenium
- Developing CI/CD pipelines with GitHub Actions and Travis CI

Uber Technologies Inc. 🔗 Jun 2021 – Aug 2021
Software Developer Intern Remote

Developed new software to assist copyright and localization experts, designed to streamline translation and copywriting workflows for users in the APAC and EU regions. Competed and won a 3-month summer internship through the program PilotCity.

🎓 Education

University of Wisconsin-Madison 🔗 Sep 2024 – May 2028
Bachelors of Science, Computer Science Madison, WI

Incoming freshman intending to major Computer Science and Data Science, and minor in Manufacturing Engineering

California Crosspoint High School 🔗 Aug 2020 – May 2024
High School Diploma Hayward, CA

Weighted GPA of 4.313. Taking with 9 APs and 5 Honor classes so far, Relevant coursework includes AP Computer Science A, AP Physics 1, and AP Calculus AB/BC. Founder of the Computer Science Club and VP of Rubik's Cube Club.

University of California, Berkeley 🔗 Jun 2022 – Aug 2023
PreCollege Scholars, Computer Science Berkeley, CA

Completed coursework in CS61A, CSB1BL, CS197 and MATHN1A with a 3.9 GPA over the course of two summers. Equivalent coursework to a rising sophomore at Berkeley.

Chabot College 🔗 Aug 2023 – May 2024
Concurrent High School Enrollment, Computer Science Hayward, CA

Taking CAS92A: Introduction to Networks and CAS85: Cloud Infrastructure and Services

</> Skills

Full Stack Developer
with Python, Java, Kotlin, GoLang, SQL, Rust, Scheme, TypeScript, JavaScript, HTML, and CSS

Experience with Modern Technologies
including Quarkus, Flutter, Flask, Android SDK, Detox, React, KTor, GCP Suite, AWS, mySQL, NoSQL DBs, CI/CD pipelines, Selenium and Svelte

Diverse Skillset
experience with tools/software such as the JetBrains Suite (IntelliJ IDEA), GitHub/VCS, Jira, Monday, Notion, and Fusion360

Raspberry Pi, Arduinos, Embedded Systems
Experience with embedded systems development with the Raspberry/Orange Pi, NVIDIA Jetson, and Arduino.

⚜ Awards

Sacramento Regional Finalists   Mar 16, 2024
FIRST Robotics

Deans List Regional Semi-Finalist 🔗   Mar 26, 2023
FIRST Robotics
The FIRST Dean's List Award honors exceptional secondary school students from the FIRST Robotics Competition and FIRST Tech Challenge for their leadership, dedication, and commitment to the FIRST Core Values.

Creativity Award sponsored by Rockwell Automation 🔗   Mar 26, 2023
FIRST Robotics

📁 Highlighted Projects

Personal Projects   Sep 2019 – present
- Simple, accessible, path generation for cutting foam inserts for tools, localized with ArUco tags. Photos become files suitable for laser cutting or CNC router/mill
- School schedule optimization software which solves the constraint-based problem of optimizing a master course schedule for my high school, utilizing AI and metaheuristics.
- Developed multiple bots on Discord deployed via GCP, AWS, Azure
- Built an Android App for paper trading stocks and cryptocurrencies, reverse engineering Yahoo's Finance API's
- Built libraries to interact with Discord's WebSocket Gateway, which gave exposure to networking, encryption, and compression.

FIRST Robotics 2023/2024   Jan 2023 – May 2024
Charged Up, Crescendo
Brought new programming skills in a team environment which enabled us to design and develop more advanced and competitive mechanisms for our robot, including
- 4 Module Coaxial Swerve Drive (250 hz odometry, 50 hz vision localization)
- 2 Degree of Freedom (DoF) Arm with Pneumatic Manipulator
- 3 DoF Pivoting-Elevator-Wrist with Custom Shooter
The development of these mechanisms challenged our team to delve deeper manufacturing and fabrication, control systems and swerve/inverse kinematics, which in turn enhanced our understanding of advanced robotics concepts. Under my leadership, our team was able to rank the highest we've achieved for the past couple of years.
frc-2023 repository 🔗 frc-2024 repository 🔗

UC Berkeley: 2048, Deques, Gitlet, BYOW, Scheme Interpreter, Hog, Cats, Ants   Jun 2022 – Aug 2023
Completed a diverse range of projects in CS61BL & CS61A, including a Git implementation from scratch and fully functional Scheme Interpreter written in Python.

🔧 Interests

3D Printing
I have a Bambu Labs X1-Carbon printer, which I use for robotics/personal projects

Audiovisual, IT, Networking
Experience with production audio/video tools and enterprise networks (Cisco Meraki)

Linux
Daily driving Arch Linux + Windows for personal and academic use.