Kohmei Kadoya

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Online Portfolio: https://kohmeik.com
GitHub: https://github.com/Kohmei358

SUMMARY

I strive to make complex robots more accessible and delightful to interact with by creating simple, powerful, and responsive software tools and redundant hardware.

EDUCATION

Worcester Polytechnic Institute (WPI), Worcester, MA
Bachelor of Science in Robotics Engineering, May 2023
Masters in Robotics Engineering, May 2023
Williston Northampton School (WNS), Easthampton, MA
High School Diploma, GPA 4.0 May 2019
Related Coursework:
AP Computer Science, AI and ML, AP Physics 2/C, Robotics and Engineering Track, Mobile App Development, Introduction to Circuits, Programing Abstractions, Web Programming with Python & JS

SKILLS

Software: GitHub, Microsoft (Excel, Word, Powerpoint, Outlook), Apple (Pages, Numbers, Keynote), Google (Docs, Sheets, Slides, Forms), SolidWorks, Fusion 360, Various 3D Printing Slicers
Programming Languages: C, C++, Java, Python, HTML, Javascript, CSS, MATLAB, React
Operating Systems: Windows, Mac OS, unRaid, Ubuntu
Foreign Language: Fluent in Japanese

CERTIFICATIONS / WORK EXPERIENCE

PADI Open Water Driver, (Japan), June 2013
JSA Ski Certification Level 1, (Japan), March 2012
Imagine Plus, Sapporo, Japan, Dec 2019- Jan 2020
- Worked for 30 hours over 2 weeks during winter break respond to tech support queries for English speaking clients for various companies in the greater Sapporo area.

PROJECTS

Intuitive Control Method for a 3D printed 6 Axis Robotic Arm, (WNS), Sept 2017- May 2019
- Organized a 4 person team to create a control method for a 6 DOF robotic arms that used IR motion tracking gloves to mimic the user's hand/arm motions.
- Sourced electronics and used additive manufacturing to create a robotic arm with finger.
- Designed kinematic models to have the robot replicate the motion of users hand in real time.
- Recognized by researchers at The University of Floria and was asked to consult for a similar ongoing project at their campus.

Global Internship Website, (ASES Stanford), May 2020- Sept 2020
- Lead the creation of a handshake-like internship application website that handles hundreds of applications per year using React, Firebase, and Scss.

- Conducted user interviews to find pain-points about the current application system and used Adobe XD to optimize user experience for both desktop and mobile browsers.
- Designed a read-optimized website to store internship, application, and user data using Firebase Storage.

Vex Robotics Team, (WNS), Sept 2015- June 2019
- Led and developed a 5 person robotics team into a 15 person team at my high school.
- Organized the design, programing, and strategy for a robot that placed 6th in New Englands.
- Campaigned for and managed a $4500/year budget and negotiated with the school for lab access.

Combat Robotics. (WPI), Sept 2019 - Current
- Learned about and created multiple combat ready robots, many of them as part of a team.
- Lead teams to create CAD models, prototyped and continuously improved various combat robots.
- Optimized stiffness to weight ratios using Solidworks simulation and created tool-paths using Fusion360.
- Utilized WPI's machine shop to mill, turn, laser cut, and heat treat various materials to get optimal geometry and material properties.

Content Delivery Server, Personal Project, July 2016- Current
- Designed, assembled, and continue to maintain a NAS server with disk and power failure redundancy.
- Integrated various software components to allow users to stream media stored the server, back up personal data, and and use the server as a proxy.

Vex U Robotics Team, (WPI) , August 2019 - Current
- Developed a localization system based on odometery and cameras using OpenCV.
- Built and tuned a color filter based system to locate and identify objects in the game field.
- Created various robot parts to manipulate game objects using machine tools and FDM 3D printers.
- Programmed the robot to fully autonomously complete a part of the game, using various sensors and frameworks, while collaborating with a 4 person software team on GitHub.
- Our team of 20 has been invited to compete at Vex Worlds 2020.

Custom Racing Quadcopter, Personal Project, April 2019 - July 2019
- Designed, sourced, assembled, and tuned a small and agile quadcopter.
- Recreationally raced and maintained both hardware and software of the quad.

Hack @ WPI, WPI,. Jan 2020
- Organized a 5 person team to develop a simple 3D game in unity in 48 hours.
- Set up, managed, and taught an agile GitHub workflow to allow for more seamless collaboration between teammates while under time pressure.