KAI NAKAMURA

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SUMMARY

Highly motivated and academically accomplished student pursuing a double major in Computer Science and Robotics Engineering, with strong programming skills and a track record of successful projects.

EDUCATION

Worcester Polytechnic Institute, B.S. Computer Science, B.S. Robotics Engineering | **4.0 GPA** *Graduating May 2025*
Raisbeck Aviation High School, Valedictorian of the 2021 Class | **4.0 GPA** *Graduated 2021*

PROJECTS

Autonomous Mapping Robot, ROS, Python | *kainakamura.com/project/slam-robot* *March – May 2023*
- Developed an autonomous robot that utilizes LIDAR sensors and SLAM for simultaneous mapping and localization
- Created efficient algorithms for frontier exploration and pathfinding along with pure pursuit and obstacle avoidance

Pick-and-Place Robotic Arm, MATLAB | *kainakamura.com/project/robot-arm* *Sept. – Oct. 2023*
- Programmed a 4-DOF serial robotic manipulator in MATLAB to pick up and sort colored objects
- Implemented forward and inverse kinematics, trajectory generation, and a robust computer vision system

Multi-Robot Collaboration, C++ | *kainakamura.com/project/robot-escape-room* *March – May 2022*
- Programmed and assembled three robots to work together to escape from a randomized grid-based maze
- Established inter-robot communication over Wi-Fi using ESP32 microcontrollers with MQTT messaging

Solar Panel Replacer, C++, SolidWorks | *kainakamura.com/project/solar-panel-replacer* *Jan. – March 2022*
- Designed and manufactured a robot to autonomously replace solar panels on a miniature house
- Utilized SolidWorks to create a four-bar linkage system, gripper mechanism, and compound gearbox

Open Source Plugin for Charity, Java | *kainakamura.com/project/speedrun-showdown* *2020 – 2022*
- Created Minecraft Speedrunning Plugin for an event with 32 world record-holding players and top content creators
- Assumed full responsibility for designing and developing the plugin to align with the event staff's requirements
- Instrumental in facilitating over $10,000 in donations for Plant with Purpose through the plugin's integration

PROFESSIONAL EXPERIENCE

Technical Lead, iCode | Bellevue, WA *May 2022 – Aug. 2024*
- Taught over 150 total students, aged 8-16, by leading 16 different week-long courses in coding and engineering
- Created an educational YouTube channel on coding and robotics with over 40,000 views and 1,000 watch hours
- Provided meaningful feedback on class materials and student dynamics in weekly status reports to parents
- Led diverse courses including Robotics, AI & Machine Learning, Digital Art, Game Development, Drone AI, Java

Web Developer, Seattle Sounders Alliance Council | Remote *June – Sept. 2021*
- Redesigned UI and restructured organization for a WordPress site to improve readability and navigation

Web Developer, Seattle Society of Flight Test Engineers | Tukwila, WA *March – July 2018*
- Collaborated with a small group of students and met biweekly with Boeing Engineers to create a custom WordPress theme using HTML, CSS, JavaScript, and PHP

LEADERSHIP

Web-Tech Chair, Sigma Pi Fraternity | *sigmapigammaiota.org* *2023 – 2024*
- Responsible for maintaining and updating the website of the Gamma Iota chapter
- Organize and lead weekly committee meetings to discuss key initiatives and educate new members

Lead Programmer, FIRST Robotics Competition Team | Seattle, WA *2017 – 2021*
- Facilitated software development for Skunk Works Robotics, FRC Team 1983
- Responsible for mentoring new programmers and conducting regular code reviews

SKILLS

Java, C/C++, Python, JavaScript, TypeScript, HTML/CSS, AWS, MATLAB, Git, Vim, React, Next.js, Autodesk Inventor