Yifei Liu

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EDUCATION

Carnegie Mellon University Pittsburgh, PA
Master of Science in Electrical and Computer Engineering May 2023
Selected Courses: Embedded Real-Time System, Advanced Mechatronic Design, Secure Software Systems
GPA: 3.73 / 4.0

Virginia Polytechnic Institute and State University Blacksburg, VA
Bachelor of Science in Computer Engineering – Controls, Robotics & Autonomy May 2021
GPA: 3.76 / 4.0 Four consecutive semesters in Dean's List

SKILLS

Programming Languages: Advanced – C, C++, Python; Intermediate – Java
Operating Systems: Windows, Linux (Ubuntu), MacOS
Hardware: Advanced – TI CC3220SF, MSP 432

WORK EXPERIENCE

Software Engineer Intern Pittsburgh, PA
Oracle America, Inc May.2022 – Aug.2022

- Patched Unbreakable Enterprise Kernel.
- Mined UEK commits and found several missing backport and forward-port broken commits.
- Handled and reproduced a significant IO performance regression in a newer version of UEK.
- Investigated io_uring to check the reason of performance regression.

ACADEMIC EXPERIENCE

Robotic Guide for visually impaired users Pittsburgh, PA
Carnegie Mellon University Spring 2022

- Utilizing magnetic sensors to collect information on artificial skins to analyze the accurate location and magnitude of the applied force.
- Reading and delivering haptic signals from a 5-sensor structure to communicate with the visually impaired user.
- Printing necessary testing components with 3D-printers designed with AutoCAD.

Reservation Enforcement and Power Management on Linux Kernel Pittsburgh, PA
Carnegie Mellon University (Course: Embedded Real Team System) Fall 2021

- Integrated Linux kernel modules and codes to support new customized system calls.
- Monitored running time and utilization of selected processes with high resolution timer.
- Reserved the upper limits of selected processes with computation and period time from system call.
- Implemented Rate Monotonic Analysis to guarantee the schedulability of each reservation request.
- Implemented four partition policies on multi-core task affinity decision enforced by schedulability.
- Generated Linux virtual files for showing real-time process schedule information.

Self-Moving Sorting Robot Blacksburg, VA
Virginia Polytechnic Institute and State University (Course: Embedded Systems) Spring 2021

- Led a three-person group developed a three-wheel Rover with camera and arm which can pick up target and drop it to a desired place, using TI CC3220SF board.
- Developed wheel moving part with a PID speed controller.
- Employed SPI and Wi-Fi techniques to collaborate with two other control units with a MQTT network protocol.
- Improved response time through using a RTOS (Real-Time Operating System), FreeRTOS.