Ji wook Kim

10324 Wateridge Circle #284, San Diego, California, United States
+1 619-679-1119 | jiwook021@gmail.com | Linkedin | Github
My Website: https://www.jkimengineer.com

Embedded System, Electrical, Firmware, Internet of Things, Signal Processing, Sensor, Network, Localization, and AI Engineer.

Education

Northeastern University

BS in Computer Engineering Technology
Jan 2018 - Aug 2021
GPA: 3.7 / 4.0

Skills

Computer Languages

- C • Modern C++ • Linux System Programming • Python
- MATLAB • BASH • Network Programming with C
- C/C++ APIs: Linux, RTOS, ROS, Thread, Semaphore, IPCs, signal, pipes, Vector, Array, List, Stack, Queue, PriorityQueue, Map, Set, opencv, Algorithm, File, Clock, socket, network
- SystemVerilog • LaTeX
- Python Automation(Shell, Excel, Web Scrapping)
- Assembly Language • JavaScript • HTML • CSS

Electronics

- Digital/Analog Circuit Design • FPGA
- Power Electronics • Electromagnetics • Arm
- Sensors and Actuators • Osiloscope, Multimeter
- Bare metal MCU (Arduino, Arm Cortex-M)
- Soldering • PCB Design • Function Generator
- Function Generator • RaspberryPi • SPICE

Electronics Communications

- I2C • SPI • UART, RS-232, RS-422, RS-485
- Analog and Digital Communications • GPS
- WiFi • 4G • Bluetooth

Mathematics:

- Linear Algebra • Vector Calculus • ODE
- Discrete Mathematics • Probability and Statistics
- Complex Anlaysis

Applied Mathematics:

- Data Structure & Algorithm • DSP
- Computer Vision • Control System • SLAM
- Deep Learning • Machine Learning

Computer Science:

- Computer Architecture • OOP
- Linux System Programming • Operating System
- Linux Kernel, Device Driver • Network Programming
- Computer Network • gcc, g++, gdb, makefile, cmake
- Git • ROS(Robot Operating System) • Docker
- Localization Algorithms • Sensor Fusion
- Agile Methodology • Automation with Python

IDEs:

- Visual Studio • Visual Studio Code • STM32Cube
- Jupyter Notebook • Arduino IDE • Vivado
- Microchip AVR Studio • Colab

My Certifications

More than 100 Engineering Certifications:

https://www.jkimengineer.com/Menu/CERTIFICATES.html

Portfolio

www.jkimengineer.com/Menu/Personal%20Projects.html

Experience

Senior Engineer Oct 2022 - Current
Qualcomm | San Diego, California, USA

- Qualcomm SoC Snapdragon network device driver development with C.

Embedded System Engineer Jan 2022 - Oct 2022
Hanyang University Technology Commercialization | Seoul, Korea

- Dedicated for inventing location tracker systems for Police and Emergency officers. Our team and I mainly worked on LTE uplink's RSRP(Reference Signal Received Power) collection algorithm development for localizing People's cellular Phones. I primarily worked on SystemVerilog development with Xilinx FPGA with Vivado for high-speed signal processing as an SoC modem. I also worked on Embedded Linux development with C and C++, and assisted in electronic circuit design and signal processing. I also held various tests for our products' TTA(Telecommunication technology Association) certifications.
- Managed codes with Samba, SVN, Excel, and Git.

Robotics Software Engineer July 2021 - Dec 2021
Viewmagine | Seoul, Korea

- Developed drone station electronic circuit, embedded software for controlling actuators, and developed HTTP socket development interacting with the Website and drone Station. Used ORB-SLAM algorithm for drone(Linux ROS) to autonomously take down to the station, interact drone and drone station through WiFi as default gateway with TCP/IP socket communication.
- Autonomous drone development with Orb-SLAM, Machine Vision, and Sensor fusion algorithm(Kalman filters) on ROS(Robot Operating System) framework and OpenCV. Pixhawk PX-4 Drone ROS development and gimbal firmware development.
- Research on deep learning algorithms for object detection with Pytorch.
- Managed code and docker containers with Git and Docker.

Co-op Hardware: Electrical Engineer Jan 2019 - July 2019
Bose | Boston, MA

- I was in charge of writing bare metal embedded system firmware with C and designed the electronic circuit for an audio-based Embedded device that could play music and perform LED interactions through laser sensors, rotary encoder, capacitive sensors, buttons, and potential meters for Bose product's prototypes. Used various voltage signal processing c coding.
- Performed thermo-testing for lithium-ion battery and battery characteristic analysis for the silver-zinc battery. Created various testing equipment via the microcontroller.

Embedded System Engineer Jan 2020 – April 2020
Northeastern University: Silicon synapse lab | Boston, MA

- Silicon Synapse Lab: I was In charge of developing Electrical circuits and firmware(STM32 Arm cortex M) for the Robot bat. Controlled IMU, servo motors, Bluetooth with STM32 HAL library. Managed Code with Git

Research Assistant Jul 2016 - May 2017
Stony Brook University: Intelligent System Lab | Stony Brook, NY

- Researched in developing physical, statistical, and mathematical models for manufacturing and lithium-ion battery manufacturing modeling, analysis, reliability assessment, thermo and charging analysis

Robotics Engineer November 2015 – April 2017
Stony Brook High School | Stony Brook, NY

AP Physics Teaching Assistant November 2016 - May 2017
Stony Brook High School | Stony Brook, NY

Awards

Stony Brook School

Physics Highest Honors, Regional Finalist in First Tech Challenge, Head of School Honor Roll, AP Scholar with Distinction

High School Mathematical Competition in Modeling: Finalist Jan 2016

Link for the Award