Ji wook Kim

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My Website: https://www.jkimengineer.com

EDUCATION

Northeastern University

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

Stony Brook School

High School Diploma
May 2014 - June 2017

SKILLS

Programming Languages

• C • C++ • Network Programming with C • Linux System Programming • Python • BASH • MATLAB
• APIs: STL, Linux, windows, numpy, matplotlib, pandas, ROS, opencv, ceres, pytorch, fastapi, selenium • Assembly Language • JavaScript • MySQL • JAVA
• C# • HTML • CSS • LaTeX

Electronics

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

Electronics Communications

• I2C • SPI • UART, RS-232, RS-422, RS-485
• 4G-LTE • WIFI • Bluetooth

Mathematics:

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

Applied Mathematics:

• Data Structure Algorithm • Digital Signal Processing
• Computer Vision • Control System • Deep Learning
• Probabilistic Robotics • Machine Learning

Computer Science:

• Computer Architecture • Embedded Linux
• Operating System • Linux System Programming
• Network Programming • Computer Network
• ROS(Robot Operating System) • Docker • Git
• Localization Algorithms • Sensor Fusion Algorithms
• Web Scrapping and Excel automation with Python

IDEs:

• Visual Studio • Visual Studio Code • STM32Cube
• Jupyter Notebook • Arduino IDE • Vivado
• Colab

CERTIFICATIONS

Link for Certifications:

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

PORTFOLIO

Link for the portfolio:

https://www.jkimengineer.com/Menu/Personal%20Projects.html
Github: https://github.com/jiwook021

EXPERIENCE

Embedded System Engineer Hanyang University: Infoseize System
Jan 2022 -Current | Seoul, Korea

• Hanyang University Technology Commercialization center: HELPs LTE Signal localization Company. I am currently developing an LTE signal strength-based localization embedded device for police officers and emergency medical services to localize people as soon as possible. I mainly work on SystemVerilog development with Xilinx FPGA chip and Vivado IDE for high-speed signal processing modem. I assist in SoC development, electronic circuit design, embedded Linux development, and research and development on GPS, Bluetooth, and WiFi for accurate localization on embedded Linux devices

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

• Drone battery charging station circuit, embedded firmware with HTTP and socket programming development.
• Research in wireless/wire charging for 4-cell lithium-ion battery.
• Pixhawk PX-4 Drone, gimbal firmware research and development with ROS
• Assist in autonomous drone development with Orb SLAM and Sensor fusion algorithm(Kalman filters) on ROS(Robot Operating System) Frameworks.
• Research on deep learning and computer vision algorithms for object detection with OpenCV and Pytorch
• Managed code and docker containers with Git and Docker.

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

• Wrote firmware with C and designed the electronic circuit for an audio-based Embedded a device that could play music and perform LED interactions through proximity sensors, rotary encoders, buttons, and potential meters. Designed procedural time-based software for the devices' prototype, allowing the company to understand and realize the second sleep bud product and conduct user testing

• Performed thermo-testing for lithium-ion battery and battery characteristic analysis for the silver-zinc battery. Created various testing equipment via microcontroller.

Embedded System Engineer Northeastern University: Silicon synapse lab
Jan 2020 – April | 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 Stony Brook University: Intelligent System Lab
Jul 2016 - May 2017 | Stony Brook, NY

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

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

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

AWARDS

Physics Highest Honors
May 2016

• Highest grade in AP physics class out of sixty students.

Regional Finalist in First Tech Challenge
Jan 2017

• Achieved finalist position in FTC(First Tech Challenge) New York State regional competition.

High School Mathematical Competition in Modeling: Finalist
Jan 2016
Link for the Award

• Finalist in mathematical modeling contest using probability and statistics analysis.

AP Scholar with Distinction, Head of School Honor Roll
Stony Brook School