

Ky Heon

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Education

University of California, Los Angeles (UCLA)

B.S. in Mechanical Engineering

June 2023

Relevant Coursework:

- Control System Design, Numerical Methods & Analysis, Algorithms, Kinematics of Robotics, Fourier Optics

Experience

Automation & Controls Engineer

June 2024 - Current

Freezer Engineering

Denver, CO

- Designed PlantPax and Ignition SCADA systems for projects across the oil, gas, chemical & mining industries
- Independently developed distributed control infrastructure to manage facility safety and optimize production
- Coordinated with engineers in the development of network drawings, one-line diagrams, and arc flash studies
- Spearheaded integration of DCS and SCADA systems across multiple facility startups
- Managed client relations and led cross functional teams to execute on projects generating over \$2 million
- Designed a data-driven model predictive control algorithm reducing annual operational costs by over \$150,000

Software Developer

September 2021 - July 2023

ASME X1 Robotics

Los Angeles, CA

- Built a video streaming server to host real-time camera feed from BruinBot using Flask and Ngrok
- Pioneered the development of the computer vision algorithm allowing "BruinBot" to detect human features, enhancing it's abilities to interpret and intelligently respond to it's environment
- Researched and implemented cloud computing strategies to offload the computer vision to a serverless environment, decreasing tracking latency by over 80%
- Solved the forward and inverse kinematics of the quadruped robot dog "Boelt"

Automation & Controls Engineer

May 2020 - September 2020

EnviroCare International

American Canyon, CA

- Implemented a software framework utilizing the Rockwell Automation toolkit to prioritize the safety of onsite operators of our industrial systems
- Engineered and designed IO simulations to test software before deployment, minimizing production downtime during commissioning
- Led a collaborative effort with the electrical team to translate ladder logic diagrams to relay systems
- Constructed HMI for onsite operators, enhancing system monitoring capabilities

Projects

HandAid

- Created a 4 DOF serial robot to help hospital patients with limited mobility feed themselves
- Coded a Julia package to solve the forward and inverse kinematics of the 4R manipulator
- Simulated the pathing of the robot and implemented the kinematics with servo motors and a PS4 controller

Secure AI

- Developed a platform that lets users search through video footage using natural language
- Designed a RAG based multi-modal machine learning engine that reduced model hallucinations by over 90%
- Created demos and presentations of the novel platform to silicon valley venture capitalists
- Winner of LlamaIndex's 2024 Machine Learning Hackathon with over 400 participants

Skills

CAD & FEA: SOLIDWORKS, Autodesk Inventor, AutoCad, Plant3D, Fusion 360

Languages: Python, MATLAB, Julia, TS, C/C++, Java

Automation: Ignition, PlantPax, TIA, Studio 5000, VFD (Eaton, Allen-Bradley, Schneider, Danfoss)

Tools: Pavilion8 MPC, FT Analytics, SIMULINK, React, Flask, Linux, Excel, L^AT_EX

Other: Strong skills in technical and interpersonal communication