

Ky Heon

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Education

University of California, Los Angeles (UCLA)

B.S. in Mechanical Engineering

June 2023

Relevant Coursework:

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

Experience

Automation & Controls Engineer

May 2020 - September 2020

EnviroCare International

American Canyon, CA

- Programmed Siemens & Allen-Bradley PLC modules for an industrial scum tank mixer and fryer pump system with RSLogix 5000
- Engineered and implemented IO simulations to unit test software before deployment, minimizing production downtime and on-site debugging
- Constructed Human Machine Interfaces for onsite operators, enhancing system monitoring capabilities
- Led the onsite training program and authored comprehensive operation manuals ensuring operator proficiency in system maintenance

Software Developer

September 2021 - July 2023

ASME X1 Robotics

Los Angeles, CA

- Built a video streaming server to host real-time video feed from BruinBot using Flask and Ngrok
- Led a team of 3 to develop image detection
- Decreased the latency of computer vision detection by offloading system from Raspberry PI to a Google server
- Solved the forward and inverse kinematics of "Boelt" a 4 legged robot dog

Projects

Solar Methane Reactor

- Designed a solar powered reactor to break down greenhouse gasses (CH_4) in to fuel (H_2) and graphite
- Simulated and performed analysis of a solar concentrator coupled with the reactor and collector system
- Achieved thermodynamic cycle that can yield 1kg hydrogen gas and 3kg graphite per solar day

HandAid

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

Modified Chebyshev Mechanism

- Lead a group of 7 to design and analyze a rocking tabletop using a chebyshev kinematic chain.
- Developed a kinematic analysis package for closed loop mechanisms with Julia.
- Coordinated with the mechanical team to construct a numerical solver and simulation app in MATLAB

Secure AI

- 3rd place winner of LlamaIndex's 2024 RAG Hackathon with over 400 participants
- Developed a platform that uses RAG (Retrieval Augmented Generation) to let users search through video footage using natural language
- Used Google's Gemini multimodal model and OpenAI's CLIP embedding to perform similarity searches from user queries in a vector database

Skills

CAD & FEA: SOLIDWORKS, Inventor, Fusion 360

Languages: Python, MATLAB, Typscript, Julia C/C++, Java, SQL

Tools: React, Flask, Linux, Excel, \LaTeX

Other: Strong skills in technical and interpersonal communication