Will Kraus

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EDUCATION

Carnegie Mellon University   Pittsburgh, PA
Master of Science in Mechanical Engineering, Focus in Robotics and Controls   *December 2024 (expected)*

Pennsylvania State University   State College, PA
BS in Mechanical Engineering, Minor in Engineering Leadership Development   *May 2023*

RELEVANT EXPERIENCE

Undergraduate Researcher   August 2022 - May 2023
Networked Robotic Systems Lab at Pennsylvania State University   *State College, PA*

- Worked with grad students to integrate path planning research in MATLAB to mobile robot and Vicon motion capture setup
- Led ongoing development of autonomous mobile robots programmed in C++ and MATLAB for current projects
- Presented refurbished RC chassis-based robot fleet of 6 robots to professors to use for further cooperative research and lab coursework opportunities

Vibration Analyst Intern   May 2022 - August 2022
KCF Technologies   *State College, PA*

- Analyzed vibration data to detect root causes of equipment failures in industrial machinery
- Communicated with clients to ensure proper sensor readings in management system
- Presented research on integrating FANUC robots in Ford manufacturing plant to machine health platform by timing vibration sensor collection windows to robot management system and robot G-code

PROJECTS

Surveillance of Autonomous Vehicle Test Track | *Python, OpenCV*   January 2023 - May 2023

- Led students from Chalmers University and Penn State to program a DJI drone in Python to detect fence breaches at AstaZero autonomous vehicle research facility in Sweden
- Assisted in the development of key software deliverables: view fence from a top-down perspective, identify fence breaches from animals or intruders, and store video feed for further review.
- Presented video of operating drone and research poster to industry judges that will save employees from spending 2 hours/month hiking 10 kilometers
- Awarded Lockheed Martin First Place for Best Project among hundreds of senior Penn State teams

ACRP National Design Competition | *Device Prototyping, Technical Writing*   January 2020 - May 2020

- Developed a Bluetooth device to help seniors at large airport navigate terminals with analog display and inputs
- Led team to conduct field research at a local airport terminal using Human-Centered Design principles
- Awarded Second Place nationwide in Management and Planning category for research paper, commercial video, and preliminary ROI analysis

Penn State Robotics Club President | *Manufacturing, Educational Outreach*   August 2021 - May 2023

- Expanded club from 6 members over pandemic to 60 members working on semester-long Arduino competitions
- Founded humanoid dancing robot project using a VR headset and ROS2 for pediatric cancer charity event

TonyPi (Humanoid Robotics) Elective | *Python, OpenCV, Webots*   January 2023 - May 2023

- Programmed Raspberry Pi-based humanoid robot in Python to complete objectives such as dancing, unstable exercise movements, and face tracking
- Planned robot movements in Webots and uploaded to physical robot to compare results in stability analysis

SKILLS

Programming: Python (Matplotlib, Numpy, OpenCV), MATLAB/Simulink, Webots, C++ (Arduino), Linux
Prototyping: 3D Modeling (Fusion360, SolidWorks, Blender, Abaqus), 3D Printers, Mills, Waterjet, Soldering
Organization Analysis: Lean Sigma (Yellow Belt), Human-Centered Design, Microsoft Power BI