Joseph Kawiecki

(708)-308-4324 | josephkawiecki@gmail.com | linkedin.com/in/joseph-kawiecki | jkawiecki.github.io

EDUCATION

Purdue University – West Lafayette, IN **December 2023**
Master of Science: Computer Engineering *GPA: 3.9/4.0*
Focus: Machine Learning

Purdue University – West Lafayette, IN **December 2022**
Bachelor of Science: Computer Engineering *GPA: 3.8/4.0*

EXPERIENCE

Purdue University – West Lafayette, IN **June 2023 – Present**
Graduate Teaching Assistant

- Leading 10+ undergraduate students to develop an educational web application made with CherryPy and React
- Provided online breadboard, Verilog, and real FPGA build-interaction to 300+ students with less than 10ms delay

Cognitive Robot Autonomy and Learning Lab – West Lafayette, IN **January 2023 – Present**
Graduate Research Assistant – Computer Science

- Constructing universal robot movement policies given a reference motion with deep reinforcement learning (RL)
- Assembled an RL-based model to teach dual UR5e arms to lift a chair within PyBullet simulation

Blue Origin – Kent, WA **May 2022 – August 2022**
Software Engineer Intern

- Collaborated on an Agile structured team to improve the backend of a manufacturing web application supporting 5,000+ users
- Built and unit-tested an application programming interface (API) uploading file data to manufacturing work plans
- Presented API tool to superiors resulting in a 20x speed upgrade

Textron – Muskegon, MI **May 2021 – August 2021**
Automation Engineer Intern

- Utilized programmable logic controllers (PLC) with industrial sensor systems to automate plant machinery
- Installed and programmed a laser profiler to scan parts and reduce variance in measurement by 400%

PROJECTS

Conditional Generative Adversarial Networks – West Lafayette, IN **February 2023 – April 2023**
Personal Project

- Recreated generative model detailed in *Conditional Generative Adversarial Nets* (cGAN) with MNIST dataset
- Generated images with 20% better quality relative to baseline as evaluated by Frechet Inception Distance (FID)

CodeSLAM – West Lafayette, IN **August 2022 – December 2022**
Personal Project

- Implemented a paper detailing efficient, 3D representation of geometry for autonomous SLAM perception systems
- Leveraged PyTorch to enhance depth prediction accuracy of variational autoencoder (VAE) model by 5x

LEADERSHIP

Boiler Robotics – West Lafayette, IN **September 2020 – Present**
President, Member

- Led an innovative environment of 30+ students managing weekly meetings, project timelines, and an $18,000 budget to compete in Mars Society's University Rover Challenge (URC)
- Produced vision and navigation software to run on an Nvidia Jetson TX2 and ZED2 camera via ROS2 and CUDA
- Developed an autonomous Mars rover capable of life detection, equipment servicing, terrain traversal, and more

SKILLS

- **Languages:** C++, C, Python, Java, JavaScript, HTML, CSS, Bash, CUDA, Verilog, System Verilog, MATLAB
- **Frameworks:** PyTorch, TensorFlow, Keras, ROS, CherryPy, Node.js, React.js, REST API, CI / CD, ONNX, Agile
- **Tools:** Git, Docker, Kubernetes, Linux, Jira, OpenCV, NumPy, Scikit-Learn, Pandas, GPU, PyBullet, AWS
- **Courses:** Deep Learning Optimization, Reinforcement Learning, Machine Learning, Computational Methods, OS, Artificial Intelligence, Software Engineering, Data Structures, Algorithms, Data Science, ASIC Lab, OOP, AI / ML