

# JIHYO PARK

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## EDUCATION

Purdue University - West Lafayette, IN

August 2021 - May 2025

- Bachelor of Science in Computer Engineering | Concentration in AI/ML (GPA: 3.53/4.0)

## TECHNICAL SKILLS

**Languages:** Python (PyTorch, TensorFlow, NumPy, Pandas, Keras, Scikit-learn, Seaborn), SQL, C, C++, Java

**Tools:** Git, GDB, Visual Studio Code, PyCharm, Jupyter Notebook, SAS

**Skills:** Deep Learning, Reinforcement Learning, Computer Vision, Natural Language Processing, Data Structures and Algorithms

## WORK EXPERIENCE

### AI/ML Team Leader | Purdue University

Aug 2024 - Present

*Vertically Integrated Projects - Team ORSOL X SAS Institute*

- Acting as the point of contact for the Forecasting AI/ML Team, overseeing the planning, development, and implementation of projects and strategies.
- Enhanced the previous forecasting model by **15%** for EV charging demand, incorporating **CNN1D**, **RNN**, and **Temporal Fusion Transformer**, utilizing I210 Corridor traffic flow data.
- Leading a team of three ML students, fostering strong decision-making and strategic planning skills, and providing extensive leadership in the implementation of complex ML strategies.

### AI Research Intern | Purdue University

May 2024 - July 2024

*Summer Undergraduate Research Fellowship - Collaborative Robotics Lab X Kaur Lab*

- Conducted research in agricultural engineering within robotics, focusing on **anomaly detection** and leveraging robotics data science lifecycle methodologies with a team of 10.
- Designed and improved 8 detection devices and data collection tools, enhancing the robotic mechanisms' efficiency.
- Implemented **Spiking Neural Networks** and **Central Pattern Generators** to boost sensory processing, energy efficiency, and motor control.

### Undergraduate AI Researcher | Purdue University

Feb 2024 - Present

*Collaborative Robotics Lab X Kaur Lab - PI: Richard Voyles, Upinder Kaur*

- Contributing as co-author to the "Subterranean Robot" project by taking the responsibility of data analysis and building the 3D reconstruction model using **ORB\_SLAM3**.
- Enhanced the accuracy of circle detection model for feature extraction by **20%** utilizing **Adaptive Gaussian Threshold** and **CLAHE**.
- Improved detection performance by applying custom preprocessing techniques and leveraging the **YOLOv5** framework for real-time object detection.

## PROJECTS

### OneFormer Reimplementation

Oct 2024 - Present

- Reimplemented OneFormer to unify image segmentation tasks (semantic, instance, panoptic) into a single transformer-based model using **PyTorch**.
- Improving accuracy across ADE20k and Cityscapes datasets, focusing on optimizing task-conditioned joint training and query-text contrastive loss.
- Gained experiences with image segmentation and computer vision techniques by implementing and optimizing transformer-based models for real-world datasets.

### Sokoban with Reinforcement Learning

Sep 2024 - Present

- Implementing reinforcement learning algorithms (**Monte Carlo**, **Temporal Difference**, **DQN**) in Sokoban, optimizing for puzzle completion rates and minimizing actions taken.
- Comparing RL-based performance against traditional algorithms (DFS/BFS), assessing efficiency and computational complexity.

### Sentiment Analysis Model

Mar 2024 - Apr 2024

- Developed and implemented a sentiment analysis model using **TensorFlow** to classify text data into positive, negative, and neutral sentiments, leveraging **CNN**.
- Achieved **94%** accuracy on a dataset containing thousands of text samples, improving sentiment classification through advanced preprocessing, tokenization, and feature engineering.
- Gained in-depth knowledge of natural language processing techniques, and understanding of text analysis, tokenization, and model optimization.

## AWARDS

SAS Institute: 1x Hackathon Winner