# Andrew Jeon

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## EDUCATION

**University of Washington**, Electrical and Computer Engineering — Seattle, WA
*Master of Science in Electrical Engineering (Machine Learning, Computer Vision, Robotics)* — *September 2023 - Present*
CSE546: Machine Learning, CSE576: Computer Vision, CSE571: AI-Robotics, EEP596B: Deep Learning for Big Visual Data, EEP596D: Computer Vision EEP596A: Deep Learning, EEP590: Data Structures & Algorithms, EEP567: Machine Learning for Cybersecurity, EEP599: Independent Research

**University of Illinois at Urbana-Champaign**, Electrical and Computer Engineering — Urbana, IL
*Bachelor of Science in Electrical Engineering* — *August 2016 - May 2021*

## SKILLS

**Languages:** Python, C++, C
**Tools:** Pytorch, Git, Pybullet, ROS, Rviz, Scikit-learn, Numpy, MatPlotLib, OpenCV, Container, Linux, SLAM, YOLOv8

## WORK EXPERIENCE

**Research Assistant** at **University of Washington** — December 2024 - Present
1. Sensor Fusion for Autonomous Rover Navigation, Advisor: Dr. Bingzhao Li
   - Leading the testing and evaluation of a sensor fusion inertial navigation system with 5 sensing modalities on a Rover with a solid-state LiDAR system.
   - Tuned navigation system and sensor parameters to achieve an Absolute Trajectory Error of 9.12091m across 11km trajectories.

**Researcher** at **Nvidia, University of Washington** — September 2024 - Present
1. Foundation Model Pose Estimation for Robot Grasping, Advisor: Professor Stan Birchfield
   - Leading the development of a pipeline that runs multiple instances of the foundation model, processes the transformation and pose matrices to enable precise grasping.
   - Generating synthetic data, ground truth pose matrices, and robot camera frame visualization with Pybullet for evaluation.

**Researcher** at **University of Washington** — January 2024 - September 2024
1. Image Processing for Fisheye Camera Image Object Detection, Advisor: Professor Jenq Neng Hwang
   - Led image processing with OpenCV and trained YOLOv8 Object Detection models on transformed images to achieve a 9% improvement (mAP) in roadside object detection in night-time images.
2. Regularization, SVD, and hyperparameter tuning to model neural population dynamics, Advisor: Professor Matt Golub
   - Led regularization and tuning experiments for low-rank and full-rank auto-regressive models resulting in 15-18% improvements (MSE) in model performance.

**Teaching Assistant** at **University of Washington** — September 2024 - December 2024
- Data Structures TA: Led office hours, helped students with questions, edited programming assignments and exams.

**Field Applications Engineer** at **Texas Instruments** — February 2023 - June 2023
- Led technical support and design for low power chips and sensors for Microsoft HoloLens and Intel DCAI clients.
- Organized customer visits to understand product needs and incorporate into product strategy.

**Product Applications Engineer** at **Tektronix** — April 2022 - February 2023
- Led technical support and development of marketing material for the 1 and 2 class oscilloscopes.
- Led product financial forecasting with CRM to evaluate product strategy.

**Automation Engineer** at **Burns & Mcdonnell** — June 2021 - April 2022
- Led design of SCADA control and data networks for key utility clients, BPA and PGE.

## PROJECT EXPERIENCE

**3D Semantic Segmentation for Robot Navigation** — March 2023 - June 2023
- Projected vision and text feature embeddings from a Vision Language Model to a voxel grid to perform 3D Semantic Segmentation. This resulted in a best class segmentation accuracy of 0.907 and the robot being able to navigation in 3D

**Military Target Classification** — January 2023 - March 2023
- Led soldier image collection, annotation and augmentation with Roboflow.
- Performed YOLOv8 hyperparameter tuning to achieve a mAP of 0.773 on classification of soldier images into “friend”

or “foe.”

## PUBLICATIONS

- Jeong, K. & Jeon, A. Case Study of User Experience Requirement Creation at Early Phases of System Development Life Cycle for Quick Turnaround. Human-Automation Interaction: Manufacturing, Services and User Experience (In Springer ACES Series) Editors: VG Duffy, Mark R. Lehto, Yuehwern Yih, Robert W. Proctor