Andrew Jeon

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EDUCATION

University of Washington, Seattle, WA, USA *2023 - ongoing*

Master of Science in Electrical & Computer Engineering – Machine Learning, Computer Vision, Robotics *GPA: 3.91/4.00*

Courses: CSE546: Machine Learning, CSE576: Computer Vision, CSE571: AI-Robotics, EEP596: Deep Learning for Big Visual Data, EEP596D: Computer Vision Classical & Deep, EEP596A: Deep Learning, EEP590: Data Structures & Algorithms, EEP567: Machine Learning for Cybersecurity, EEP599: Independent Research

University of Illinois at Urbana-Champaign, Urbana, IL, USA *2016 - 2021*

Bachelor of Science in Electrical & Computer Engineering *Jr./Sr. GPA: 3.57/4.00*

RESEARCH EXPERIENCE

Autonomous Rover Research Assistant with Professor Mo Li, UW *12/2024 - ongoing*

- Testing and evaluating a sensor fusion inertial navigation system with 5 sensing modalities with SLAM on a Rover with a solid-state LiDAR system. Through parameter tuning, achieved an Absolute Trajectory Error of 9.12091 meters across multi-kilometer trajectories

AI-Robotics Researcher with Professor Stan Birchfield, Nvidia, UW *09/2024 – ongoing*

- Using Foundation model for 6D Pose Estimation to perform robotic grasping. Running 2 instances of model on the robot and object. Combine the pose matrices robot-to-camera and object-to-camera to get the robot-to-object matrix to perform grasping.

NeuroAI Researcher with Professor Matt Golub, UW *07/2024 – 09/2024*

- Experimented with and tuned low rank auto-regressive models to model neural population data. SVD, L2 Regularization, hyperparameter tuning, Reduced Rank Regression Closed-Form. Achieved 22% improvement in MSE 0.000322 to 0.000264 after tuning and applying L2 Regularization on Full Rank model.

Computer Vision Researcher with Professor Hwang, UW *01/2024 – 06/2024*

- Used OpenCV Image Processing and retrained YOLOv8 Object Detection models on transformed data to better detect roadside classes in Fisheye Camera images. Specifically, transformed images into all black & white, retrained on transformed images which improved object detection on night-time images by ~9% (mAP)
- Successfully reproduced SOTA Transformer model results from academic research papers

PROJECT EXPERIENCE

3DVLMaps for Robot Navigation *04/2024 – 06/2024*

- Projected vision and text feature embeddings from a Vision Language Foundation Model to a voxel grid to perform 3D Semantic Segmentation. This allows robots to navigate in a 3D-space as opposed to only 2D. Best class segmentation accuracy was 0.907

Friend or Foe: Multi-Modal Military Target Identification *01/2024 – 03/2024*

- Data (soldier images) collection, annotation and augmentation with Roboflow.
- YOLOv8 hyperparameter tuning to classify images into “friend” or “foe.” mAP of 0.773 achieved

WORK EXPERIENCE

Teaching Assistant, University of Washington, *Seattle, WA* *09/2024 – ongoing*

- Teaching Assistant for EEP590: Data Structures and Algorithms

Texas Instruments, Field Applications Engineer*, Bellevue, WA* *02/2023 – 06/2023*

- Technical support and design for power chips and sensors for clients Microsoft HoloLens & Intel DCAI
- Lead customer visits to understand their product needs

Tektronix, Product Marketing Engineer, *Beaverton, OR* *04/2022 – 02/2023*

- Used data analytics CRM to forecast product financial performance.
- Provided technical support and generated marketing content for the 1 and 2 class oscilloscopes.

Burns&McDonnell, Electrical Engineer, *Vancouver, WA* *06/2021 – 04/2022*

- Designed control and data systems (SCADA), and MPLS networks for utility clients BPA and PGE

IMM Investment Corp, Research Analyst Intern, *Seoul, Republic of Korea* *09/2018 – 11/2018*

- Summarizing currency exchange and tech startup financials data for leadership

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

SKILLS

Languages/Libraries: Python, Pytorch, C++, C, Scikit-Learn, Numpy, MatPlotLib, OpenCV

Tools/Technologies: ROS, Docker Containers, Linux/WSL, Github, Transformers, SLAM, YOLO,
Areas: Computer Vision, Robotics, Machine Learning