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: 3.94/4.00*

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. only GPA: 3.57/4.00*

RESEARCH EXPERIENCE

AI-Robotics Researcher w/ Professor Stan Birchfield, UW   *09/2024 – ongoing*
- Engineering additions to Foundation model for 6D Pose Estimation and object tracking (FoundationPose) code base. Specifically, using forward kinematics and robot hand pose information to enable few-shot robot grasping for novel objects

NeuroAI Researcher @ SNAIL Lab, UW   *07/2024 – 09/2024*
- Investigated the ability of low rank auto-regressive models to model neural population data. SVD to create low rank models. Experimented with the effect of L2 Regularization, learning rates, epochs on MSE, AUROC, ROC metrics of said models via complete hyperparameter sweep. Overall goal was to find the "most informative" neuron stimulation patterns in order to enable a closed-loop active learning system that would speed up our ability to learn the dynamics of the neural system(brain)
- Code refactor from jupyter notebooks to python scripts, measured neuron predictability (TPR/FPR)

Computer Vision Researcher @ Information Processing Lab, UW   *01/2024 – 06/2024*
- YOLOv8 Object Detection to detect roadside classes in Fisheye Camera images. OpenCV Image Processing to transform data into all black & white. This improved object detection for night-time images by 10% (mAP)
- Successfully reproduced Crowd Localization Transformer (CLTR) crowd head counting results

ML Fairness Intern @ Make4All, UW   *08/2023 – 12/2023*
- Researched Algorithmic Fairness, Acceptability, Accessibility, Privacy, in order to develop fair user questions for an Academic Performance Prediction Machine Learning System

PROJECT EXPERIENCE

3DVLMaps for Robot Navigation   *04/2024 – 06/2024*
- Voxelized multimodal vision and text embeddings from a Vision Language Foundation Model (LSeg) to generate a 3D Visual Language map for robotic navigation allowing robots to navigate in a 3D-space as opposed to only a 2D top-down space

MagiaTimeline: Automatic Subtitle Detection Tool   *04/2024 - 06/2024*
- Used TesseractOCR, Thresholding, Heatmap clustering, to generate timeline files for video game subtitle translation

Friend or Foe: Multi-Modal Military Target Identification   *01/2024 – 03/2024*
- Used RoboFlow to annotate segmentations on soldier images. YOLOv8 to classify images of soldiers into "friend" or "foe"

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 with LDOs, Buck converters, MCU, Sensors for Microsoft HoloLens & Intel DCAI
- Lead customer visits to understand their product needs, communicated to leadership to incorporate into product strategy

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 key utility clients BPA and PGE

IMM Investment Corp, Venture Capital Research Intern, *Seoul, South Korea*   *08/2018 – 12/2018*
- Researched/analyzed companies for profitability of investment. Summarized currency and news 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/Tools: Python, Pytorch, C, Scikit-Learn, Numpy, Git, MatLab, OpenCV, YOLO, Transformers, RoboFlow
Areas: Machine Learning, Computer Vision, Robotics