JEONGEUN(JE) LEE

+1.858.373.8747 | jeongeun3.24lee@gmail.com | La Jolla, CA | dlwjddms.github.io

SUMMARY

3 years of industry experience in Machine Learning engineering and research, specializing in Deep Neural Networks, Computer Vision, and Deep Learning Algorithms. Skilled in applying and optimizing ML models with a focus on GPU performance and image processing. A passionate collaborator who enjoys incorporating with diverse individuals to implement machine learning solutions and design high-performance systems for real-world applications. Able to adhere to non-disclosure agreement while maintaining high ethical standards.

EDUCATION

University of California San Diego, San Diego, USA **Expected Jun 2026**
Master of Science in Computer Science and Engineering ***GPA: Pending***
Courses: Introduction to Robotics, Interpretable & Explainable Machine Learning, Probabilistic Reasoning & Learning

Chung-Ang University (CAU), Seoul, Korea **Graduated Aug 2022**
Bachelor of Science in Computer Science and Engineering ***GPA: 3.8/4.5***

- Vice President, CLUG (CAU Linuxer & Unixer Group, Sep 2018 – Sep 2019): Organized mentoring courses and hackathon events. 2 years of Linux mentoring through a face recognition project with Raspberry Pi

TECHNICAL SKILLS

- **Machine Learning:** *Computer Vision (Object Detection Classification) · NumPy · TensorFlow · PyTorch · SciPy*
- **Software Engineering:** *Python · C · C++ · Linux · Unix Shell · Git · Conda · Jupyter Notebook*

PROFESSIONAL EXPERIENCE

Uniquify Inc, Santa Clara, CA, USA **Feb 2021 – Jul 2024**
AI Engineer, AI Algorithm Task Team (Mar 2022 – Jul 2024)

- Improved ResNet50 training method by using Mirrored Strategy to enable synchronous distributed training across multiple GPUs on a single machine; achieved a > 2x speed up with 3 RTX 2080 GPUs compared with single GPU
- Proposed evaluation methods for neural network models using Explainable AI (XAI), Class Activation Mapping (CAM), for thorough analysis; achieved an average 15% improvement in accuracy for defect detection project
- Led a team of 10 in an agile process to develop an efficient image processing pipeline using Adaptive Gamma Correction, Contrast-Limited Adaptive Histogram Equalization, Unsharp Masking, and Gaussian Filter; increased YOLOv8 mAP from <10% to 76% in transformed MS COCO dataset; significant improvements for dark images

AI Intern, AI Algorithm Task Team (Feb 2021 – Mar 2022)

- Implemented an in-house HNSW, the Approximate Nearest Neighbors (ANN) search methods, with a focus on language consistency, scalability, and ease of debugging to enhance control of the search tool; achieved 1.2x higher accuracy on the dataset compared to other open-source ANN methods (ANNOY, NMSLIB)
- Led a project to optimize a tool for decomposing neural network models and extracting details for smooth handoff to the hardware team, including user-friendly commands that decreased manual work by 4+ hours weekly
- Gained hands-on experience through various projects with end-to-end models, including YOLO, ResNet, and GAN with their respective versions, implemented in TensorFlow/PyTorch and optimized for GPU (CUDA) inference

Irvine Tech Hub, Irvine, CA, USA **Jan 2021 – Feb 2021**
AI Engineering Intern

- Developed an attention gauge system using RetinaNet to detect facial angles and eye types; improved mAP up to 51% with limited data using discriminative layer training, learning rate finder and data augmentation
- Led a team of 5, encouraging collaboration, project planning, and problem solving; recognized as one of the top five among 30 participants in the internship/program

RESEARCH EXPERIENCE

- **Professor Pengtao Xie's Lab, Student Researcher** | University of California San Diego, USA | Sep 2024 - present
  Conducting research on the application of Multi-Level Optimization techniques to Masked AutoEncoders (MAE) and their downstream tasks for segmentation in cell data images
- **Systems and Storage Lab, Student Researcher** | Chung-Ang University, Seoul, Korea | Dec 2018 – Dec 2019
  Conducted research on EXT4 file system to improve file defragmentation efficiency using multi-threading; published papers and filed a patent

ACHIEVEMENTS & PUBLICATIONS

- Excellence Award, 2019 SW TECH-FAIR, OpenSource CLUG Hackathon, Chung-Ang University, Seoul, Korea: Developed a music application that customizes recommendations according to users' facial expressions
- "An Efficient and Parallel File Defragmentation Scheme for Flash-based SSDs" in 36th ACM/SIGAPP Symposium on Applied Computing; Second author of a paper by writing the initial draft and producing the figures