JEONGEUN(JE) LEE

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EDUCATION

University of California San Diego, San Diego, USA **Expected Jun 2026**
Master of Science in Computer Science and Engineering ***GPA: 4.0/4.0***

TECHNICAL SKILLS

- **Machine Learning:** *Computer Vision (Object Detection Classification) · NumPy · TensorFlow · PyTorch · Pandas*
- **Software Engineering:** *ROS2 · Python · C · C++ · Linux · Unix Shell · Git · Conda · Jupyter Notebook*

RESEARCH EXPERIENCE

University of California San Diego, USA

- ***Color Cube tracking with Robot Arm,*** *Co-op (Henrik I Christensen and Qualcomm)* **Feb 2025 – May 2025**
  Researching solutions using the DofBot robotic arm with Qualcomm RB3, enabling color cube tracking for task execution, aim to transitioning to alphabet toy, and integrating a language model for text commands.
- ***Professor Pengtao Xie's Lab*, *Student Researcher*** **Sep 2024 – Mar 2025**
  Conducting research on the integration of DNABERT into ProteinChat (a combination of two large language models, ESM and Llama) with a multimodal approach for enhanced biological sequence analysis.

Chung-Ang University, Seoul, Korea **Dec 2018 – Dec 2019**

- ***Systems and Storage Lab*, *Student Researcher*** : Conducted research on EXT4 file system to improve file defragmentation efficiency using multi-threading; published papers and filed a patent

PROFESSIONAL EXPERIENCE

Brain Corp Inc, San Diego, CA, USA **Jun 2025 – Sep 2025**
AI Intern, Applied ML

- Led the design and POC of an LLM-powered pre-review agent for price for automating price tag information detection quality assurance, achieving a 12.86x reduction in processing time and a 12.57x reduction in cost per image Tech: Industry LLM API, PaddleOCR and tradition CNN methods.

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

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

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
- Patented "Method of Defragmentation in File System, Recording Medium and Apparatus for Performing the Method" 2019.06.27, Application Number: 10-2019-0076969, Registration Number: 10-2226538