

JAE HONG LEE

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EDUCATION

Boston University, Boston, MA

B.A., Computer Science / Minor in Visual Arts

Computing and Technical Honor Society / Upsilon Pi Epsilon (UPE)

Coursework: Software Engineering(A), Computer System(A), Found Data Sci(A), Algebraic Algorithm(A), Graphic Design(A)

Expected May 2025

3.86 GPA | Dean's List (x4)

Korea University, Seoul, Korea

Department of Computer Science and Engineering

Coursework: Artificial Intelligence (A+), Computer Network (A), Database (A+), Algorithms(A), Data Structure(A)

Visiting Program

3.95/4.5 GPA

TECHNICAL SKILLS

Programming: C, Python, Julia, Java, MATLAB, Verilog, MySQL, HTML, CSS, JavaScript

Frameworks and Libraries: React.js, TensorNetwork, Tensorflow, Pytorch, Keras, Sklearn, Pandas, Numpy, Docker,

Developer and Design Tools: Linux, Git, Shell, Latex, CUDA, Pigma, Adobe Tool, Microsoft Office

Concepts: Artificial Intelligence, Machine Learning, Neural Networks, Operating System, API, Agile Methodology,

PROFESSIONAL EXPERIENCE

Undergraduate Research Intern

Korea Electronics Technology Institute

Jun 2024 – Aug 2024

Seungnam, Korea

- Acquired comprehensive knowledge in quantum computing through foundational studies and delivered two internal seminars on key concepts such as qubits, superposition, Bell's theorem, the EPR paradox, and quantum computing.
- Contributed to research optimizing memory efficiency for quantum simulations by storing only measured qubits, and developed a quantum circuit simulator using Google's Tensor Network as well as Grover's algorithm.

Undergraduate Summer Intern

Korea Electronics Technology Institute

Jun 2022 – Aug 2022

Seungnam, Korea

- Applied Google's Vision Transformer (ViT) for advanced breed classification in cats and dogs, incorporating Transformer and Multi-head Attention mechanisms, achieving a classification accuracy of over 95% on benchmark datasets.
- Re-engineered the ViT model using TensorFlow, developing an API and integrating it with a camera module for real-time capture applications, enabling accurate breed classification for real-life pets.

Blockchain & Web Development Intern

Xenix Studio

Jul 2020 – Nov 2020

Seoul, Korea

- Integrated Blockchain technology into on-site payment services and translated white papers to enhance knowledge of cryptocurrency and decentralized principles.
- Designed and developed a responsive web application using Figma, HTML, CSS, JavaScript, and Bootstrap.

RESEARCH PROJECTS

Text-to-Panorama Generation

Research Assistant, Advisor: Aoming Liu

Aug 2024 - Present

Boston, MA

- Investigating a cube-based approach to enhance text-to-360 panorama generation by implementing multi-diffusion, spot diffusion, and stable diffusion models for improved visual continuity.
- Aiming to create seamless transitions between cube faces, thereby enhancing depth perception and realism in generated panoramas, resulting in an immersive user experience.

AI-driven Hand Pose estimation

Research Assistant, Advisor: Eung-Joo Lee, Ji Choi

Sep 2023 - May 2024

- Constructed a method to generate natural hand movements using an XGBoost model, creating 3000 to 9000 of training datasets with a custom-built haptic controller, which improved hand pose accuracy as dataset size increased
- Developed an technique for generating hand poses and identified the need for time-series methods for reducing tremors in haptic controllers.

PROJECTS

TO-DO Calendar

React.js, Google Calendar & Authentication API, Firebase, CSS, Figma

Jan 2024 – May, 2024

Boston, MA

- Integrate task management with Google Calendar to sync tasks and deadlines, improving productivity by providing a overview.
- Automatic meeting additions have been implemented for Google Meet and Zoom to ensure users won't miss a meeting and to visually link tasks to their respective deadlines.

PUBLICATIONS

"Machine Learning-based Hand Pose Generation using a Haptic Controller," Eung-Joo Lee, Jongin Choi, Jae Hong Lee, Daniel Oh, May, 2024.