JAE HONG LEE

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EDUCATION

Boston University, Boston, MA Expected May 2025
B.A., Computer Science / Minor in Visual Arts 3.86 GPA | Dean's List (x4)
Computing and Technical Honor Society / Upsilon Pi Epsilon (UPE)
Coursework: Software Engineering, Found Data Sci, Distributed System, Computer System, Algebraic Algorithm, Graphic Design

Korea University, Seoul, Korea Visiting Program
Department of Computer Science and Engineering
Coursework: Artificial Intelligence, Computer Network, Database, Theory of Computation, Algorithms, Data Structure, Digital Logic

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

Quantum Computing Research Intern *Jun 2024 – Aug 2024*
Korea Electronics Technology Institute 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.

Computer Vision Research Intern *Jun 2022 – Aug 2022*
Korea Electronics Technology Institute 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 *Jul 2020 – Nov 2020*
Xenix Studio 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 Undergraduate Research *April 2024 - Present*
Research Assistant, Advisor: Aoming Liu 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 Undergraduate Research *Sep 2023 - May 2024*
Research Assistant, Advisor: Eung-Joo Lee, JI Choi
- 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.

TECHNICAL PROJECTS

TO-DO Calendar *Jan 2024 – May, 2024*
React.js, Google Calender & Authentication API, Firebase, CSS, Figma Boston, MA
- Integrated 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.