Dongkon(DK) Lee

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Education

Princeton University, B.S.E in Electrical and Computer Engineering — Sep 2023 – Jun 2027

- **Minors**: Computer Science and Neuroscience
- **Coursework:** Machine Learning, Data Structures and Algorithms, Logic Design, Electronic Circuit Design and Analysis, Information Signals, Fundamentals of Neuroscience, Advanced Neuroscience

Experience

Machine Learning Intern, Princeton Neuroscience Institute – Princeton, NJ — Nov 2024 – present

- Developing a reinforcement learning agent to proofread neuron segmentation (deep-Q networks, actor-critic)
- Engineered 40,000 synthetic neuron states for the data generation pipeline for imitation learning.
- Enhanced model convergence through input feature normalization and batch size optimization, reducing training time by 40%

Software Engineer Intern, Kulite Semiconductors – Leonia, NJ — Jan 2025 - Feb 2025

- Developed a frontend and backend for a Tkinter-based app utilizing deep-learning techniques (SegmentAnything)
- Improved data uploading pipeline by 85% using AWS EC2 instance and S3 buckets.

Computational Neuroscience Intern, Bringmann lab – Dresden, Germany — Jul 2024 – Aug 2024

- Independently engineered a backend pipeline for analyzing the RIS neuron, a sleep-regulating neuron discovered by the Bringmann Lab
- Achieved 97% optimization of microscopic neural imaging analysis by developing data extraction algorithms and implementing novel segmentation techniques

Extra Curricular Activities

Principal Clarinetist, Princeton University Orchestra – Princeton, NJ — Nov 2024 – present

- Lead the Clarinet section in weekly 10-hour rehearsals, culminating in four annual recitals, and International Greece Tour

Vice President, Society of Asian Scientists and Engineers – Princeton, NJ — Jul 2024 – present

- Vice President of Princeton's first SASE chapter, raised over $10,000 in funding to attend national conference and host workshops

Member, Advanced General Intelligence Reading Group – Princeton, NJ — Oct 2024 – present

- Study various papers from industry and academia related to world models, agents, benchmarking, etc. under guidance from Dr. Sebastian Seung

Software and Hardware Projects

Custom 16-bit Processor — Nov 2024 – Dec 2024

- Built and implemented a 16-bit processor in Verilog for FPGA deployment, utilizing the LC3 instruction set.
- Designed and implemented synthesizable datapath and control unit including ALU, register file, memory, and PC

Fraud Detection — Apr 2024 - May 2024

- Implemented a machine learning model for credit card fraud detection using Python, featuring dimensionality reduction via clustering algorithms and an AdaBoost classifier; achieved 95% training accuracy and 90% test accuracy on data

Technologies

Languages: C, Java, Python(Pytorch, Numpy, Pandas, Matplotlib), JavaScript, Linux, MongoDB, AWS

Technologies: Verilog, Altium, Solidworks(CAD), NX(CAD), Figma