Si Yong Lee

New York, USA ▪ siyong.lee@stonybrook.edu

EDUCATION

STONY BROOK UNIVERSITY New York
Doctor of Philosophy in Computer Science (in Progress, Advisor: Yoon Seok Yang) August 2024 - Present
- Research area: Neuromorphic Computing & Spiking Neural Networks
- Current GPA: 3.92/4.0

CHUNGNAM NATIONAL UNIVERSITY Daejeon
Master of Science in Computer Science and Engineering (Advisor: Hyungshin Kim) August 2024
- Research area: Artificial Intelligence in Embedded System
- GPA: 4.5/4.5
- Scholarships: Received scholarship for academic excellence for 1 semester. (Fall 2023)
- Thesis: An Edge-Based Deep Learning Model for Road Black Ice Detection

JEONBUK NATIONAL UNIVERSITY Jeonju
Bachelor of Science in Environmental Biotechnology February 2022

RESEARCH EXPERIENCE

Brain-Inspired Computing Lab – Prof. Yoon Seok Yang New York
Full-time Research Assistant August 2024 – Present

WORK EXPERIENCE

MindSyn Co., Ltd
Co-Founder, Principal Software Engineer May 2026 – Present

iJoon Co., Ltd Daejeon
Software & AI Engineer June 2022 – March 2024

CONFERENCE PUBLICATIONS

1. **Si Yong Lee**, R. Lee, Yoon Seok Yang, " Pay at the Event: Event-Conditioned Recurrent State Tracking and Associative Recall", **Under review**
2. **Si Yong Lee**, H. Park, R. Lee, Yoon Seok Yang, " Firefly: Multiplier-Free Spiking State-Space Models for Bit-Exact Parallel On-Device Deployment", **Under review**
3. **Si Yong Lee**, R. Lee, H. Park, B. Kang, Yoon Seok Yang, "SpikeMamba: Spike-Driven State Space Models for Energy-Efficient Biomedical Sequence Modeling", 29 th International Conference on Medical Image Computing and Computer Assisted Intervention (MICCAI 2026), Strasbourg, France, Sept. 27-Oct. 1, 2026
4. R. Lee, H. Park, **Si Yong Lee**, Y. Kim, Yoon Seok Yang, "TFST: A Hardware-Aware Spiking Transformer for On-Device Biomedical Time-Series Inference", 33rd International Conference on Neural Information Processing (ICONIP 2026), Melbourne, Australia, Nov. 23-27, 2026
5. H. Park, **Si Yong Lee**, R. Lee, Y. Kim and Yoon Seok Yang, "MindCore: Spike-Driven Programmable Accelerator for On-Device Neuromorphic Computing," 2025 IEEE 18th International Symposium on Embedded Multicore/Many-core Systems-on-Chip (MCSoC), Singapore, Singapore, 2025

JOURNAL PUBLICATIONS

1. **Si Yong Lee**, B. Kang, Yoon Seok Yang, " Adaptive Population-Encoded Spiking Neural Networks on a Neuromorphic Processor for Chest CT Classification" in IEEE Journal of Biomedical and Health Informatics (2026). (IF7.7) **Under 2nd Major Revision**

2. **Si Yong Lee*,** Y. Kim*, Yoon Seok Yang, "A Low-Power, Real-Time, and Noise-Resilient Spiking Neural Network for Bio-Signal Classification on a Neuromorphic Processor" IEEE Access (2026). **Under Revision**
3. D. Kim, G. Kim, M. Kim, **Si Yong Lee**, Yoon Seok Yang, "Advanced Training Algorithms in Sigma-Delta Spiking YOLO for Energy-Efficient Object Detection on Neuromorphic Hardware." IEEE Access (2026).

TEACHING EXPERIENCE

STONY BROOK UNIVERSITY New York
Teaching Assistant (CSE320, CSE416) August 2025– December 2025