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기타소속:

**강연제목:** 뉴로모픽 컴퓨팅 및 응용의 최근 동향/Recent Trends of Neuromorphic Computing and Applications

**Abstract:** Today, artificial intelligence (AI) systems are becoming fundamental technologies within the IT industry, with various AI systems based on von Neumann computing architecture, such as CPU and GPU, under study. However, in these AI systems, numerous processors are necessary, leading to significant energy consumption aimed at enhancing neural network performance. Furthermore, these challenges hinder the implementation of AI in edge devices. To address these issues, neuromorphic computing, which emulates the human brain, has been explored as an alternative computing paradigm for AI. Neuromorphic computing offers advantages such as event-based low energy consumption, scalable parallel processing, online learning, and the integration of memory and computation into a single unit, akin to a neuron. This presentation will introduce neuromorphic computing, focusing on recent neuromorphic hardware systems and software frameworks and exploring their applications.

### Brief Biosketch

양윤석 교수는 한국뉴욕주립대학교 컴퓨터공학과 조교수로 재직하고 있습니다. 교수로 이직하기 이전에는 캘리포니아주 서니베일에 있는 Google 에서 TPU(Tensor Processor Unit) 실리콘 디자인 및 연구 엔지니어로 근무하였습니다. 2012 년부터 2022 년까지 캘리포니아주 산타클라라에 있는 Intel Labs 의 Neuromorphic Computing Lab 에서 연구 과학자로 근무했으며 neuromorphic computing 시스템과 Loihi 칩 설계를 연구했습니다. 미국 텍사스 A&M 대학교, 칼리지 스테이션에서 전기 및 컴퓨터 공학 학사박사학위를 받았습니다.

Prof. Yoon-Seok Yang holds the position of assistant professor in the Department of Computer Science at SUNY Korea. He previously worked as a Tensor Processing Unit (TPU) silicon and research engineer at Google in Sunnyvale, California. Before joining Google, he served as a research scientist at the Neuromorphic Computing Lab at Intel Labs in Santa Clara, California from 2012 to 2022, with a research focus on neuromorphic computing systems and Loihi chip design. Prof. Yang holds a Ph.D. in electrical and computer engineering from Texas A&M University, College Station, USA.