Wenyao Zhu

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Education

Shanghai Jiao Tong University, BS in Electrical and Computer Engineering — Sept 2014 – Aug 2018

KTH Royal Institute of Technology, MS in Embedded Systems — Sept 2018 – Aug 2020

KTH Royal Institute of Technology, PhD in Information and Communication Technology — Sept 2020 – Approx. Apr 2025

Publications

- **Wenyao Zhu**, Yizhi Chen, and Zhonghai Lu, "Pooling On-the-go for NoC-based Convolutional Neural Network Accelerator", in *Proceedings of International Conference on Embedded Computer Systems: Architectures, Modeling and Simulation (SAMOS)*, Greece, 2024.
- **Wenyao Zhu**, Yizhi Chen, and Zhonghai Lu, "Activation in Network for NoC-Based Deep Neural Network Accelerator", in *Proceedings of International VLSI Symposium on Technology, Systems and Applications (VLSI-TSA)*, Taiwan, 2024.
- **Wenyao Zhu**, Yizhi Chen, Siu-Teing Ko, and Zhonghai Lu, "Redundancy Reduction for Sensor Deployment in Prosthetic Socket: A Case Study", *Sensors*, 22, no. 9: 3103, 2022.
- Zhonghai Lu, **Wenyao Zhu**, Yizhi Chen, Josephine Charnley, Valter Dejke, Andrii Pomazanskyi, Siu-Teing Ko, Begum Zeybek, Pouyan Mehryar, Zulfiqur Ali, Michalis Karamousadakis, and Dejiu Chen, "Wearable Pressure Sensing for Lower Limb Amputees", in *Proceedings of IEEE Biomedical Circuits and Systems Conference (BioCAS)*, Taiwan, 2022.
- **Wenyao Zhu** and Zhonghai Lu, "Evaluation of Time Series Clustering on Embedded Sensor Platform", in *Proceedings of 24th Euromicro Conference on Digital System Design (DSD)*, Italy, 2021.
- Other publications are listed at kth.se/profile/wenyao/publications.

Research Projects

SocketSense (EU Horizon2020 Project) — socketsense.eu

- Developed an electronic sensory system based on ESP32 for operational data collection of prosthetic sockets.
- Developed data processing and analysis models to support clinical investigation on comfortable socket design.
- Tools Used: C, Python, ESP-IDF, EasyEDA, InfluxDB, Grafana

LearnPower (Swedish Research Council (VR) project) — Github repo: NoCDAS

- Developed a cycle-accurate Network-on-chip-based deep neural network accelerator simulator using C++.
- Based on the in-network computing concept, proposed in-network non-linear activation and pooling approaches to reduce DNN inference latency.

Other Project Experience

Energy Management for Hybrid Electric Vehicle

- Implemented the Processor-in-the-loop simulation flow in Simulink using STM32-L476RGT6 MCU.
- Tested and optimized C code for PIL simulation of powertrain controllers with several energy management strategies for hybrid electric vehicles.
- Tools Used: C, Simulink, Embedded Coder, STM32CubeMX, Keil uVision

Technologies

Research Interests: Hardware Accelerator for AI, Network-on-Chip, Computer Architecture, Edge Computing, Embedded Sensor Systems.
Programming Languages: Python, C, C++, MATLAB, Verilog
Software and Hardware: Design Compiler, Vivado, Simulink, MCU (ESP32, STM32)