Jisu Kwon

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Education

B.S. Electronics Engineering, *Early Graduated*, Kyungpook National University, Aug. 2019.

Current Positions

B.S./M.S./Ph.D. integrated student, School of Electronics Engineering, Kyungpook National University, Sep. 2019 – present.

Fields of Research Interest

Behavior changable neuromorphic learning/inference processor based on partial software replacement and hardware dynamic reconfiguration architecture. Ultra-low-power AI accelerator design for resource-limited embedded system. Energy-efficient/fast/low-memory-cost binary firmware replacement via firmware segmentation. Emulator-coupled Verilog RTL model runtime partial replacement framework development. Econometrics and Empirical Industrial Organization

Experiences

Teachings

C Programming & Practice (EECS201), Fall 2020, Teaching Assistant for Daejin Park.

Introduction to Computer Science and Engineering (ITEC201008), Spring 2020, Teaching Assistant for Hohee Kim.

C Programming & Practice (EECS201), Spring 2020, Teaching Assistant for Daejin Park.

Projects

Daegu Science High School Self-Research Program, *Context-Recognition Intelligent Automatic Control Systems based on Self-Reprogramming*, Mar. 2020 – Nov. 2020.

National Research Foundation (NRF), *Re-adaptative Runtime Synthesis and Low-Power Execution Platform of Things-Cloud Connected Software/Hardware for Lightweight Intelligent IoT Device*, 2019 – 2022.

Papers

Journals

Jisu Kwon, Moon Gi Seok, and Daejin Park. "Low-Power Fast Partial Firmware Update Technique of On-Chip Flash Memory for Reliable Embedded IoT Microcontroller". Under review at *IEICE Transactions on Electronics*.

Jisu Kwon, Moon Gi Seok, and Daejin Park. "GPU-Based ECC Decode Unit for Efficient Massive Data Reception Acceleration". Accepted at *Journal of Information Systems*.

Jisu Kwon, and Daejin Park. "Acceleration of ECC Computation for Robust Massive Data Reception under GPU-based Embedded Systems". *Journal of Korea Institute of Information and Communication Engineering*, vol. 24, num. 7, pp. 956-962, Jul. 2020.

Jisu Kwon, Jeonghun Cho, and Daejin Park. "Efficient Flash Memory Access Power Reduction Techniques for IoT-Driven Rare-Event Logging Application". *IEMEK Journal of Embedded Systems and Applications*, vol. 14, num. 2, pp. 87-96, Apr. 2019.

Conferences

Jisu Kwon, Moon Gi Seok, and Daejin Park. "Runtime Partial Replacement Framework of Emulator-Coupled Verilog RTL Models for Flexible IP Design Parameter Exploration". Under review at *Asia and South Pacific Design Automation Conference (ASP-DAC)*, Tokyo, Japan, Jan. 2021.

Jisu Kwon, and Daejin Park. "Segmented Polynomial Approximation for Controlled System Characteristic Estimation on Lightweight Edge Device". Under review at *IEEE/IEIE International Conference on Consumer Electronics Asia (ICCE-Asia)*, Busan, South Korea, Nov. 2020.

Jisu Kwon, Moon Gi Seok, and Daejin Park. "User sensible Sliding Firmware Update Technique for Flash-Area/Time Cost Reduction toward Low-Power Embedded Software Replacement". *IEEE Symposium on Low-Power and High-Speed Chips and Systems (COOLChips 23)*, Web-fashion, Apr. 2020.

Jisu Kwon, and Daejin Park. "Efficient Massive Data Reception Using GPU-based ECC Decoding Operation Acceleration". *World IT Congress 2020 (WITC 2020)*, Seoul, South Korea, Feb. 2020, Recommended to SCOPUS-index Journal (JIPS).

Jisu Kwon, and Daejin Park. "Implementation of Computation-Efficient Sensor Network for Kalman Filter-based Intelligent Position-Aware". *International Conference on Artificial Intelligence in Information and Communication (ICAIIC)*, Fukuoka, Japan, Feb. 2020.

Jisu Kwon, Jeonghun Cho, and Daejin Park. "Function Block-Based Robust Firmware Update Technique for Additional Flash-Area/Energy-Consumption Overhead Reduction". *International Symposium on Intelligent Signal Processing and Communication Systems (ISPACS)*, Beitou, Taipei, Dec. 2019.

Jisu Kwon, Jeonghun Cho, and Daejin Park. "Efficient Flash Memory Access Power Reduction Techniques for IoT-Driven Rare-Event Logging Application". *IEEE Symposium on Low-Power and High-Speed Chips and Systems (COOLChips 22)*, Yokohama, Japan, Apr. 2019, Poster session.

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