

KIM, JIWON

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RESEARCH INTEREST

Mobile System Energy Optimization
Battery Management Systems
(Multi-Agent) Reinforcement Learning

TECHNICAL SKILLS

Software Development

- Programming Languages: C, C++, Python, MATLAB

Hardware Development

- Circuit design (PCB schematic design)
- Knowledge of simulation tools: MATLAB Simulink

Languages

- Korean – Native
- English – Advanced

EDUCATION

Yonsei University, Seoul, Republic of Korea

Mar. 2018 – Present

Ph.D. Student in Computer Science

Mobile Embedded Systems Lab., Advised by Prof. Hojung Cha

(GPA 4.17 / 4.5)

Ewha Womans University, Seoul, Republic of Korea

Mar. 2011 – Feb. 2016

B.S in Electronic Engineering

(GPA 3.51 / 4.5)

PUBLICATIONS (SCIE JOURNALS AND INTERNATIONAL CONFERENCES)

1. **J. Kim**, S. Baek, S. Jeon, H. Cha, “DynLiB: Maximizing the Energy Availability of Hybrid Li-ion Battery Systems,” The ACM SIGBED International Conference on Embedded Software (EMSOFT 2022), Hybrid-Shanghai, Oct. 07-14, 2022.
2. **J. Kim**, E. Kim, S. Jeon, J. Ahn, H. Jun, H. Cha, “PVoT: Reconfigurable Photovoltaic Array for Indoor Light Energy-powered Batteryless Devices,” The International Conference on Hardware/Software Codesign and System Synthesis (CODES+ISSS 2022), Hybrid-Shanghai, Oct. 07-14, 2022.
3. **J. Kim**, S. Jeon, J. Kim, H. Cha, “Voltage Prediction of Drone Battery Reflecting Internal Temperature,” The 59th Design Automation Conference (DAC 2022), San Fransisco, USA, July 10-14, 2022.
4. **J. Kim**, Y. Choi, S. Jeon, J. Kang, H. Cha, “Optrone: Maximizing Performance and Energy Resources of Drone Batteries,” The ACM SIGBED International Conference on Embedded Software (EMSOFT 2020), Virtual Conference, Sep. 20-25, 2020.
5. **J. Kim**, S. Baek, Y. Choi, J. Ahn, H. Cha, “Hydrone: Reconfigurable Energy Storage for UAV Applications,” The International Conference on Hardware/Software Codesign and System Synthesis (CODES+ISSS 2020), Virtual Conference, Sep. 20-25, 2020.

6. S. Jeon, **J. Kim**, J. Ahn, H. Cha, “Optimizing Discharging Efficiency of Reconfigurable Battery with Deep Reinforcement Learning,” The ACM SIGBED International Conference on Embedded Software (EMSOFT 2020), Virtual Conference, Sep. 20-25, 2020.

PATENTS

1. H. Cha, S. Jeon and **J. Kim**, “Battery Level Indicator and Method Displaying Battery Level Thereof” KR Patent No. 10-2091340, filed December 11, 2018. and issued March 13, 2020.
2. H. Cha, **J. Kim**, Y. Choi, S. Jeon and J. Kang, “Apparatus and Method for Providing Usable Capacity of a Battery for Drone” KR Patent No. 10-2303478, filed November 21, 2019. and issued September 13, 2021.
3. H. Cha, **J. Kim**, Y. Choi, J. Ahn and S. Jeon, “Hybrid Energy Storage Device and Method for Improving Available Capacity of Drone Battery” KR Patent Application No. 10-2020-0140548, filed October 27, 2020. Patent Pending.
4. H. Cha, **J. Kim**, E. Kim, S. Jeon, J. Ahn and H. Jun, “Reconfigurable Photovoltaic Array Monitoring Apparatus and Method” KR Patent Application No. 10-2021-0172113, filed December 12, 2021. Patent Pending.

RESEARCH PROJECT EXPERIENCES

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| Development of Energy Optimization Techniques for Multi-cell Battery System <i>Intelligent Machine Center, Samsung Research, Republic of Korea</i> | Apr. 2019 – Dec. 2019 |
| Development of High-Assurance (\geq EAL6) Secure Microkernel <i>Institute for Information & communications Technology Promotion (IITP), Ministry of Science and ICT, Republic of Korea</i> | Apr. 2018 – Present |

AWARDS AND HONORS

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| Academic Research Fellowship , BK21 PLUS Yonsei Scholarship | Fall semester, 2022 |
| Ph.D. Fellowship , National Research Foundation (NRF) of Korea | June 2020 – May 2022 |
| Excellence Prize , Department of Electronic Engineering, Ewha Womans University <i>Capstone Design</i> | Fall semester, 2015 |
| Academic Excellence Scholarship , Department of Electronic Engineering, Ewha Womans University | Fall semester, 2014 |
| 2nd Place in 2014 LES Asia-Pacific Business Plan Competition Award, Licensing Executive Society | Nov. 24, 2014 |
| Gold Medal in 4th International Festival of Innovations, International Federation of Inventors' Associations (IFIA) | Apr. 24, 2014 |
| Grand Prize (Prime Minister's Award, 1st place among 3,441 teams) in National University Invention Competition, Korean Intellectual Property Office | May 5, 2013 |