

Geunyoung Park

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Introduction

I am a postdoctoral researcher at [MICLab](#) (Advisor: Kyunghwan Choi), KAIST, South Korea.

Specializing in optimal control and design in mobility dynamics and vehicle thermal management systems (VTMS).

Research includes predictive control of electric vehicle transmissions, predictive energy management for fuel cell electric vehicles, and VTMS modeling and optimization.

Education

2022 – 2026	Korea Advanced Institute of Science and Technology (KAIST) Ph.D. Candidate in Cho Chun Shik Graduate School of Mobility	Daejeon, South Korea
2020 – 2022	Korea Advanced Institute of Science and Technology (KAIST) M.S. in Division of Future Vehicle	Daejeon, South Korea
2013 – 2019	Korea Aerospace University (KAU) B.S. in Mechanical Engineering	Goyang, South Korea

Publications

G. Park, K. Choi, and D. Kum, “Synthesis of a Link-Level Energy-Time Predictor Toward the Implementation of a Link-based Predictive EMS,” *IEEE Access*.

G. Park, S. Kang, H. Lee, J. Bae, K. Sung, and D. Kum, “High-fidelity modeling of the Toyota Mirai FCEV thermal management system: a step toward real-vehicle thermal behavior,” *Energy Conversion and Management*, vol. 366, p. 121700, 2026.

S. Kang, **G. Park**, and D. Kum, “Physics-informed neural networks for estimating flooding in a three-dimensional proton exchange membrane fuel cell” *International Journal of Heat and Mass Transfer*, vol. 263, p. 128702, 2026.

G. Park, K. Choi, M. Kim, E. Cho, K. Sung, and D. Kum, “Development of a real-time link-based predictive energy management strategy for extending fcev lifespan using an experiment-driven degradation model,” *Applied Energy*, vol. 397, p. 126246, 2025.

G. Park, K. Choi, and D. Kum, “Predictive control of a dog-clutch transmission via a transformer-based velocity prediction,” *IEEE Transactions on Vehicular Technology*, vol. 74, p. 7430-7443, 2025.

K. Choi, **G. Park**, and D. Kum, “An analytical approach to the predictive energy management of connected hevs: What information do we need to guarantee global optimality?” *IEEE Transactions on Intelligent Transportation Systems*, vol. 25, no. 9, p. 12 749–12 761, 2024.

G. Park, K. Choi, and D. Kum, “Stack degradation protection of fcevs via predictive energy management strategy with segmented roads,” in 2024 *American Control Conference (ACC)*. IEEE, 2024, p. 3643–3649.

G. Park, J. Park, and D. Kum, “Preview control of dog clutch-based electric vehicle transmission via dynamic programming: Proof of concept,” in 2022 *IEEE Conference on Control Technology and Applications (CCTA)*. IEEE, 2022, p. 683–690.

Work Experience

Hanwha Corporation

Aug. 2019 – Aug. 2020

Managed manufacturing process, quality assurance, and end-to-end production coordination for missile systems

KAIST

Sep. 2026 – Aug. now

Postdoctoral Researcher, Optimal Energy Management and Thermal Management

Skills

Programming: Python, MATLAB

Modeling: GT-SUITE, Simulink