MYEONGSEOK RYU

https://kaist-mic-lab.github.io 0009-0004-3279-5765 github.com/DDingR
193, Munji-ro, Yuseong-gu, Daejeon, 34051, Korea +82 10-9953-6538 dding_98@kaist.ac.kr

Myeongseok Ryu is under Ph.D. course. *(compiled on July 27, 2025)*

RESEARCH INTERESTS

Control Theory
Adaptive Control, Optimal Control

Neural Network-based Control
Neuro-Adaptive Control, Reinforcement Learning

Contraction Theory

Online Optimization

PROFILE & LOGOS

EDUCATION

Korea Advanced Institute of Science and Technology (KAIST), Korea *September 2025 – Present*
CCS Graduate School of Mobility
Ph.D. of Science in Mobility Engineering
- Supervisor: Prof. Kyunghwan Choi, KAIST

~~**Gwangju Institute of Science and Technology (GIST), Korea**~~, (*Withdrew for further studies*) *March 2025 – May 2025*
~~School of Mechanical Engineering~~
~~*Ph.D. of Science in Mechanical Engineering*~~

Gwangju Institute of Science and Technology (GIST), Korea *March 2023 – February 2025*
School of Mechanical Engineering
Master of Science in Mechanical Engineering
- Thesis: Constrained Optimization-Based Neuro-Adaptive Control (CoNAC) for Euler-Lagrange Systems
- Supervisor: Prof. Kyunghwan Choi, GIST

Incheon National University (INU), Korea *March 2017 – February 2023*
Department of Mechanical Engineering
Bachelor of Engineering

PROFESSIONAL EXPERIENCE

Korea Advanced Institute of Science and Technology (KAIST), Korea *May 2023 – August 2025*
Part time Contract Research Scientist
- Research on Neural Network-based Control for Mobility Systems

SKILLS

Languages:	Korean, English
Programming:	Matlab/Simulink, Python, C/C++
Implementation:	**Simulation** CarMaker, ROS
	Others Git, LaTeX, Jekyll

PUBLICATIONS

Under Review Papers

1. Constrained Optimization-Based Neuro-Adaptive Control (CONAC) for Euler-Lagrange Systems Under Weight and Input Constraints
Myeongseok Ryu, Donghwa Hong, Kyunghwan Choi*
IEEE Transactions on Cybernetics, 2025

International Conference Papers

4. Physics-Informed Online Learning of Flux Linkage Model for Synchronous Machine
Seunghun Jang, **Myeongseok Ryu**, Kyunghwan Choi*
IEEE IECON, (accepted, in press), 2025

3. Constrained Optimization-Based Neuro-Adaptive Control (CONAC) for Synchronous Machine Drives Under Voltage Constraints
Myeongseok Ryu, Niklas Monzen, Pascal Seitter, Kyunghwan Choi, Christoph M. Hackl*
IEEE IECON, (accepted, in press), 2025

2. Imposing a Weight Norm Constraint for Neuro-Adaptive Control
Myeongseok Ryu, Jiyun Kim, Kyunghwan Choi*
European Control Conference (ECC), (accepted, in press), pp. 380-385, 2025

1. A Comparative Study of Reinforcement Learning and Analytical Methods for Optimal Control
Myeongseok Ryu, Junseo Ha, Minji Kim, Kyunghwan Choi*
International Workshop on Intelligent Systems (IWIS), pp. 1-5, 2023

Domestic Conference Papers

3. Approximation-based Steering Controller with Deep Neural Network
Myeongseok Ryu, Kyunghwan Choi*
제어로봇시스템학회 (ICROS), pp. 884-885, 2024

2. Integrated Motion Control of Four in-Wheel Motor Actuated Vehicles Considering Path Tracking, Ride Comfort, and Energy Efficiency
Myeongseok Ryu, Kyunghwan Choi*
한국자동차공학회 추계학술대회 (KSAE), pp. 490, 2023

1. Data-driven Modeling of Model Residuals for Linear Model Predictive Control of Nonlinear Systems
Myeongseok Ryu, Kyunghwan Choi*
제어로봇시스템학회 (ICROS), pp. 837-838, 2023

Preprint Papers

1. CNN-based End-to-End Adaptive Controller with Stability Guarantees
Myeongseok Ryu, Kyunghwan Choi*
Arxiv, 2024

GRANTS AND AWARDS

IEEE International Workshop on Intelligent Systems (IWIS) *July 2025*
Best Presentation Paper Award

European Control Association (EUCA) *June 2025*
Student Support 400 EUR

Graduate International Research Experience Fellowship (GIST-IREF) *October 2024*
Research Support 16 million KRW (approx. 12,000 USD)

Institute of Control, Robotics and Systems (ICROS) *June 2023*
Best Paper Award

INU MATLAB Cody Challenge *June 2021*
Top Prize