Seunghyeop Nam

PERSONAL INFORMATION

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RESEARCH INTERESTS

Keywords: Deep Reinforcement Learning (DRL), Robot Navigation (ROS2), Unknown Space Exploration, Fusion Learning, Cryptocurrency DRL Trading, Deep Learning
Objective: Advance the state of Deep Reinforcement Learning through innovative research in robot navigation, unknown space exploration, and fusion learning. Apply DRL techniques to interdisciplinary areas, including cryptocurrency trading, autonomous systems, and novel AI-driven applications.

EDUCATION

Konkuk University **Seoul, Korea**

Bachalor of Computer Science and Engineering *Mar. 2019 – Aug. 2025*

PUBLICATIONS

Seunghyeop Nam, Changseok Woo, Sinkyu Kang, Tuan Anh Nguyen, and Dugki Min. "iNAV-drlSLAM: An Improved Indoor Self-Driving Framework for Mobile Robots using Deep Reinforcement Learning integrated with SLAM." In 2023 15th International Conference on Advanced Computational Intelligence (ICACI), pp. 1-8. IEEE, 2023.

Seunghyeop Nam, Changseok Woo, Sinkyu Kang, Tuan Anh Nguyen, and Dugki Min. "SLAM-DRLnav: A SLAM-Enhanced Deep Reinforcement Learning Navigation Framework for Indoor Self-driving." In 2023 International Conference on Mechatronics, Control and Robotics (ICMCR), pp. 44-48. IEEE, 2023.

Seunghyeop Nam, Tuan Anh Nguyen, Eunmi Choi, and Dugki Min. "FH-DRL: Exponential-Hyperbolic Frontier Heuristics with DRL for accelerated Exploration in Unknown Environments." 2025 IEEE Transactions on Intelligent Vehicles [Under Review].

Seunghyeop Nam, Tuan Anh Nguyen, Eunmi Choi, and Dugki Min. "A Multi-head Fusion-based Actor-Critic Deep Reinforcement Learning with Memory Contextualise for End-to-End Autonomous Navigation" 2024 IEEE Transactions on Intelligent Vehicles [Under Review].

Seunghyeop Nam, Tuan Anh Nguyen, Eunmi Choi, and Dugki Min. "FH-DRL: Exponential-Hyperbolic Frontier Heuristics with DRL for accelerated Exploration in Unknown Environments." 2025 IEEE Transactions on Intelligent Vehicles [Under Review].

Tuan Anh Nguyen, Damsub Lim, **Seunghyeop Nam**, Dugki Min, Eunmi Choi, Iure Fe, Franciso Airton Silva and Paulo Maciel. "Metaverse Edge Computing: On Aging Dependability Analysis of Edge-in-the-loop Simulation Platform for AAM Vehicle Digital Twin" MetaCom

2025 [Under Review].

Seunghyeop Nam, Seunghyeon Kang, Tuan Anh Nguyen, Eunmi Choi and Dugki Min. "PGELU: Metaverse-Driven Deep Learning Boosted by A Parametric GELU for Stable and Scalable Recognition of Emotions and 3D Objects" MetaCom 2025 [Under Review].

RESEARCH EXPERIENCE

Konkuk University, Distributed Multimedia Systems (DMS) Lab **Seoul, Korea**

Undergraduate Researcher *Jul. 2021 – Present*

- Participated in the Midcareer Researcher Grant, Participating Intelligent MAEC Collaborative Framework (i-MeC2 Framework)
- Conducted research on robot navigation technologies, including Simultaneous Localization and Mapping (SLAM), sensor fusion, stabilization, and frontier-based exploration using Deep Reinforcement Learning.
- Developed state-of-the-art DRL algorithms for applications in cryptocurrency trading and robotic systems.
- Designed neural networks for disease detection in both human and agricultural contexts.

PROJECTS

LG ThinQ **Seoul, Korea**

Primary Developer for Industrial Project: "Smart Mirror" *Feb. 2021 – Dec. 2021*

- Developed a Smart Mirror system capable of displaying dynamic information such as weather forecasts, news headlines, and calendars.
- Integrated natural language processing (NLP) capabilities for conversational interactions with users.
- Implemented emotion detection and classification algorithms to recommend attire based on users' current mood.

Dream Semeter **Seoul, Korea**

Quant trading of Cryptocurrency using DRL *Aug. 2024 – Dec. 2024*

- Developed and implemented a deep reinforcement learning (DRL)-based crypto trading strategy to optimize portfolio returns.
- Designed and trained DRL models using advanced reinforcement learning algorithms such as DDPG, TD3, and SAC.
- Built a backtesting framework to evaluate strategy performance against historical cryptocurrency market data.

AWARDS AND HONORS

- 1st Place, VEX Robotics National Competition *2017*
- Participant and Judge, VEX Robotics World Championship *2017*

ADDITIONAL INFORMATION

Programming Skills: Python, C, C++, ROS2, Java, Javascript, Kotlin, MATLAB, SQL, Computer Vision, Deep Learning, Deep Reinforcement Learning.
Languages: Korean (native fluency), English (professional proficiency), German (A2)
Military Service: Alternative military service as a Social Service Agent in the Republic of Korea (Oct. 2023 – Jul. 2025).
Certificate and Licences:

- Driver's Licence (Republic Of Korea): 1st Class (Ordinary) *Dec. 2017*
- Driver's Licence (Republic Of Korea): 2nd Class (Small) *Aug. 2018*
- Craftsman Bartender (Human Resources Development Service of Korea) *Apr. 2019*
- MOS PowerPoint(Microsoft) *Apr. 2019*
- MOS Excel Core(Microsoft) *Jun. 2019*