Daniel Rho

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EDUCATION

Sungkyunkwan University (SKKU) **Seoul, Korea**

Sep. 2020 – Aug. 2022 *MSE in Artificial Intelligence,* Department of Artificial Intelligence
- Thesis: "Neural Residual Flow Fields for Efficient Video Representations" (Advisor: Jong Hwan Ko)
- CGPA: 4.31 / 4.5

Fall 2020
- *Teaching Assistant,* "Operating Systems" (for electronic and electrical engineering students)

Mar. 2014 – Aug. 2020 *Bachelor of Economics in Economics,* Department of Economics
- CGPA: 4.23 / 4.5, Dean's List (2018)

BSE in Computer Science and Engineering, Department of Computer Science and Engineering
- Major GPA: 4.44 / 4.5

RESEARCH INTERESTS

- AI / ML
- Neural Fields
- Self-supervised Learning
- Audio Understanding and Generation

PUBLICATIONS

1. **Rho, D.***, Lee, B.*, Nam, S., Lee, J. C., Ko, J. H., Park, E. "Masked Wavelet Representation for Compact Neural Radiance Fields," Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR), 2023.
2. Kim, T.*, **Rho, D.***, Lee, G., Park, J., Ko, J. "Regression to Classification: Waveform Encoding for Neural Field-Based Audio Signal Representation," ICASSP, 2023.
3. **Rho, D.,** Cho, J., Ko, J., Park, E. "Neural Residual Flow Fields for Efficient Video Representations," Asian Conference on Computer Vision (ACCV), 2022.
4. Cho, J.*, Nam, S.*, **Rho, D.,** Ko, J., Park, E. "Streamable Neural Fields," European Conference on Computer Vision (ECCV), 2022.
5. **Rho, D.,** Park, J. Ko, J., "NAS-VAD: Neural Architecture Search for Voice Activity Detection," Interspeech, 2022.

PROJECTS AND PATENT

Jan. 2021 – Dec.2021 "Deep Learning Techniques for Multi-Intelligence using Drones" *Ministry of Science and ICT, Korea*
- Enhanced the accuracy of sound source localization and detection in noisy environments.

Jun. 2019 – Dec. 2020 "Deep Neural Network Based Real-Time Accurate Voice Source Localization using Drones *Ministry of Science and ICT, Korea*
- Developed lightweight neural networks and improved sound localization and detection performance

Mar. 2020 "Speech Generation Direction Inference Method and Device using Deep Neural Network"
- Application No.: 10-2020-0032737

AWARDS, HONORS AND SCHOLARSHIPS

Fall. 2020 – Spring 2022 Sungkyun Honorable Scholarship, Sungkyunkwan University
Jan. 2020 *First Place & Ministerial Award,* Artificial Intelligence Grand Challenge, Ministry of Science and ICT
Jun. 2019 *Third Place,* Artificial Intelligence Grand Challenge, Ministry of Science and ICT
Fall 2018, 2019 Academic Excellence Scholarship, Sungkyunkwan University

PROFESSIONAL EXPERIENCES

Jul. 2022 – Present *Research Engineer, AI2XL(AI to Everything Lab),* **KT** **Seoul, Korea**
- Working on speaker recognition and voice conversion

Jun.2019 – Aug. 2020 *Undergraduate Research Assistant, IRIS LAB,* **SKKU** **Seoul, Korea**
- Conducted various experiments to find lightweight and reliable neural networks for detecting voice activities.
- Improved sound localization and detection performance.
- Applied for a patent for voice activities and the direction of arrival detection system.

- Initiated a study group to read and review at least one research paper on machine learning every week.

EXTRACURRICULAR ACTIVITIES

Spring-Fall 2019	*Teaching Assistant* for basic data structures and algorithms using Python to freshmen students at **SKKU**
Jul. 2018	*Volunteer*, **SKKU-HKUST Intercultural Peer Learning Program** ● Discussed and understood social problems of Hong Kong and presented useful ideas and solutions.
Jan. 2016 – Jan. 2018	*Honorary Discharge as a Sergeant*, **Republic of Korea Air Force** ● Supported transporting troops and military materials by rail in the logistics (air transport) division.
Mar. 2015 – Dec. 2015	*Member*, Student Council of the Department of Social Sciences

TECHNICAL SKILLS

- **Programming:** python (tensorflow, pytorch), C/C++, git, docker, vim