

# Daniel Rho

✉ daniel03c195@gmail.com | 🏠 github.daniel03c1.io | 🎓 Daniel Rho

## Research Interests

machine learning, neural fields, self-supervised Learning, and audio understanding and generation

## Education

### Sungkyunkwan University (SKKU)

MSE in Artificial Intelligence

Seoul, Korea

Sep. 2020 - Aug. 2022

- Thesis: "Neural Residual Flow Fields for Efficient Video Representations" (Advisor: Jong Hwan Ko)
- CGPA: 4.31 / 4.5

### Sungkyunkwan University (SKKU)

Bachelor of Economics & BSE in Computer Science and Engineering

Seoul, Korea

Mar. 2014 - Aug. 2020

- CGPA: 4.23 / 4.5
- Major GPA (Computer Science and Engineering): 4.44 / 4.5
- Dean's List (2018)

## Publications

### PREPRINTS

Understanding Contrastive Learning Through the Lens of Margins

Daniel Rho, TaeSoo Kim, Sooil Park, Jaehyun Park, JaeHan Park

arXiv preprint arXiv:2306.11526 (2023). 2023

FFNeRV: Flow-Guided Frame-Wise Neural Representations for Videos

Joo Chan Lee, Daniel Rho, Jong Hwan Ko, Eunbyung Park

arXiv preprint arXiv:2212.12294 (2022). 2022

### CONFERENCE PUBLICATIONS

Regression to Classification: Waveform Encoding for Neural Field-Based Audio Signal Representation

TaeSoo Kim\*, Daniel Rho\*, Gahui Lee, JaeHan Park, Jong Hwan Ko

ICASSP 2023 - 2023 IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP), 2023

Masked Wavelet Representation for Compact Neural Radiance Fields

Daniel Rho\*, Byeonghyeon Lee\*, Seungtae Nam, Joo Chan Lee, Jong Hwan Ko, Eunbyung Park

Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR), 2023

Streamable Neural Fields

Junwoo Cho\*, Seungtae Nam\*, Daniel Rho, Jong Hwan Ko, Eunbyung Park

Computer Vision – ECCV 2022, 2022

Neural Residual Flow Fields for Efficient Video Representations

Daniel Rho, Junwoo Cho, Jong Hwan Ko, Eunbyung Park

Proceedings of the Asian Conference on Computer Vision (ACCV), 2022

NAS-VAD: Neural Architecture Search for Voice Activity Detection

Daniel Rho, Jinhyeok Park, Jong Hwan Ko

Proc. Interspeech 2022, 2022

## Professional Experience

### Research Engineer

AI2XL (AI to Everything Lab), KT

Seoul, Korea

Jul. 2022 - Present

### Undergraduate Research Assistant

IRIS LAB, SKKU

Seoul, Korea

Jun. 2019 - Aug. 2020

## Patents

**"A Method for Inferring of Generating Direction of Sound Using Deep Network and an Apparatus for the Same"**

Application No.: 10-2020-0032737

2020

## Research Projects

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### “Deep Learning Techniques for Multi-Intelligence using Drones”

Ministry of Science and ICT, Korea

Korea

Jan. 2021 - Dec. 2021

### “Deep Neural Network Based Real-Time Accurate Voice Source Localization using Drones”

Ministry of Science and ICT, Korea

Korea

Jun. 2019 - Dec. 2020

## Awards, Honors and Scholarships

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Fall 2020 **Sungkyun Honorable Scholarship (Fall 2020 - Spring 2022)**, Sungkyunkwan University

Korea

Jan. 2020 **First Place & Ministerial Award**, Artificial Intelligence Grand Challenge, Ministry of Science and ICT

Korea

Jun. 2019 **Third Place**, Artificial Intelligence Grand Challenge, Ministry of Science and ICT

Korea

Fall 2019 **Academic Excellence Scholarship**, Sungkyunkwan University

Korea

Fall 2018 **Academic Excellence Scholarship**, Sungkyunkwan University

Korea

## Skills

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**Programming** Python (PyTorch, TensorFlow), C/C++

**Miscellaneous** git, vim,  $\LaTeX$ .

## Extracurricular Activities

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### Teaching Assistant

Korea

Sungkyunkwan University (SKKU)

- Operating Systems (Fall 2020)
- Basic data structures and algorithms (Spring-Fall 2019)

### Volunteer

Korea

SKKU-HKUST Intercultural Peer Learning Program

Jul. 2018

### Honorary Discharge as a Sergeant

Korea

Republic of Korea Air Force

Jan. 2016 - Jan. 2018

### Student Council Member

Korea

College of Social Sciences, SKKU

Mar. 2015 - Dec. 2015