

# Daniel Rho

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## Research Interests

Dynamic neural rendering, neural scene representation, physics-informed neural networks, and computer graphics

## Education

### University of North Carolina at Chapel Hill

Ph.D. in Computer Science

- Advisor: [Roni Sengupta](#)

North Carolina, United States

Aug. 2024 - Present

### Sungkyunkwan University

MSE in Artificial Intelligence

- Thesis: "Neural Residual Flow Fields for Efficient Video Representations" (Advisor: [Jong Hwan Ko](#), Co-advisor: [Eunbyung Park](#))
- CGPA: 4.31 / 4.5

Seoul, Korea

Sep. 2020 - Aug. 2022

### Sungkyunkwan University

Bachelor of Economics & BSE in Computer Science and Engineering

- CGPA: 4.23 / 4.5
- Major GPA (Computer Science and Engineering): 4.44 / 4.5 (top 3%)
- Dean's List, 2018

Seoul, Korea

Mar. 2014 - Aug. 2020

## Publications

### CONFERENCE PUBLICATIONS

#### F-3DGS: Factorized Coordinates and Representations for 3D Gaussian Splatting

Xiangyu Sun, Joo Chan Lee, **Daniel Rho**, Jong Hwan Ko, Usman Ali, Eunbyung Park

**ACM MM 2024** - Proceedings of the 32nd ACM International Conference on Multimedia

#### Compact 3D Gaussian Representation for Radiance Field

Joo Chan Lee, **Daniel Rho**, Xiangyu Sun, Jong Hwan Ko, Eunbyung Park

**CVPR 2024 (highlight)** - Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition

#### Coordinate-Aware Modulation for Neural Fields

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

**ICLR 2024 (spotlight)** - International Conference on Learning Representations

#### Mip-Grid: Anti-aliased Grid Representations for Neural Radiance Fields

Seungtae Nam, **Daniel Rho**, Jong Hwan Ko, Eunbyung Park

**NeurIPS 2023** - Advances in Neural Information Processing Systems

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

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

**ACM MM 2023** - Proceedings of the 31th ACM International Conference on Multimedia

#### Masked Wavelet Representation for Compact Neural Radiance Fields

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

**CVPR 2023** - Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition

#### 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** - IEEE International Conference on Acoustics, Speech and Signal Processing

#### Neural Residual Flow Fields for Efficient Video Representations

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

**ACCV 2022** - Proceedings of the Asian Conference on Computer Vision

#### Streamable Neural Fields

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

**ECCV 2022** - Proceedings of the European Conference on Computer Vision

#### NAS-VAD: Neural Architecture Search for Voice Activity Detection

**Daniel Rho**, Jinhyeok Park, Jong Hwan Ko

**Interspeech 2022** - Proceedings of Interspeech

## Professional Experience

<b>Graduate Research Assistant</b> University of North Carolina at Chapel Hill	Chapel Hill, NC, USA Aug. 2024 - Present
<b>Research Engineer</b> AI Tech Lab, KT	Seoul, Korea Jul. 2022 - Jun. 2024
<b>Graduate Research Assistant</b> IRIS LAB, Sungkyunkwan University	Seoul, Korea Sep. 2020 - Jul. 2022
<b>Undergraduate Research Assistant</b> IRIS LAB, Sungkyunkwan University	Seoul, Korea Jun. 2019 - Aug. 2020

## Skills

<b>Programming</b>	CUDA, Python (PyTorch, TensorFlow), C/C++
<b>Miscellaneous</b>	Piano, Zertifikat Deutsch B1

## Patents

<b>“A Method for Inferring of Generating Direction of Sound Using Deep Network and an Apparatus for the Same”</b>	Korea
Application No.: 10-2020-0032737	2020

## Research Projects

<b>“Deep Learning Techniques for Multi-Intelligence using Drones”</b>	Korea
Ministry of Science and ICT, Korea	Jan. 2021 - Dec. 2021
<b>“Deep Neural Network Based Real-Time Accurate Voice Source Localization using Drones”</b>	Korea
Ministry of Science and ICT, Korea	Jun. 2019 - Dec. 2020

## Awards, Honors and Scholarships

Jan. 2021 <b>First Place &amp; Ministerial Award</b> , Artificial Intelligence Grand Challenge, Ministry of Science and ICT	Korea
Fall 2020 <b>Sungkyun Honorable Scholarship (Fall 2020 - Spring 2022)</b> , Sungkyunkwan University	Korea
Jun. 2019 <b>Third Place</b> , Artificial Intelligence Grand Challenge, Ministry of Science and ICT	Korea
Fall 2019 <b>Academic Excellence Scholarship</b> , Sungkyunkwan University	Korea
Fall 2018 <b>Academic Excellence Scholarship</b> , Sungkyunkwan University	Korea

## Academic Services

<b>Conference Reviewer</b>	CVPR 2024-2025, NeurIPS 2024, ICML 2025, ICLR 2025, ACM MM 2024
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## Extracurricular Activities

<b>Teaching Assistant</b> Sungkyunkwan University (SKKU) <ul style="list-style-type: none"><li>Operating Systems (Fall 2020)</li><li>Basic data structures and algorithms (Spring-Fall 2019)</li></ul>	Korea
<b>Volunteer</b> SKKU-HKUST Intercultural Peer Learning Program	Korea Jul. 2018
<b>Honorary Discharge as a Sergeant</b> Republic of Korea Air Force	Korea Jan. 2016 - Jan. 2018
<b>Student Council Member</b> College of Social Sciences, SKKU	Korea Mar. 2015 - Dec. 2015