

# Jang-Hyun Kim

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## Education

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### Seoul National University

M.S. & Ph.D. in Computer Science

Current

B.S. in Mathematical Science, *Summa Cum Laude*

Feb.2019

- 2 years mandatory military service

### Seoul Science High School

Feb.2012

## Experience

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### Center for Data Science, NYU

Feb.2024-Aug.2024

- Visiting scholar (Advisor: Prof. Kyunghyun Cho)

### NAVER AI Lab

Aug.2018-Jan.2019

- AI research residency internship (Advisor: Prof. Jaejun Yoo)
- Research on speech enhancement ([Demo](#))

### Statistical Multiscale Analysis Laboratory, SNU

Dec.2017-Aug.2018

- Research internship (Advisor: Prof. Hee-Seok Oh)
- Research on Riemannian manifold learning (TPAMI21)

### Deepest, SNU Deep Learning Community

Sep.2017-Aug.2020

- Community manager and project participant
- Caricature generation ([GitHub](#)), source separation (Deep Complex U-Net)

### True Balance, India Mobile App Service

Jan.2017-Apr.2017

- Data analysis internship
- Working with SQL, Spark, Python

## Publications

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- C: conference, J: journal, P: preprint, \*: equal contribution, †: equal supervision

### [P3] Targeted Cause Discovery with Data-Driven Learning

**Jang-Hyun Kim**, Claudia Skok Gibbs, Sangdoo Yun, Hyun Oh Song, Kyunghyun Cho  
*arXiv*, 2024

### [C6] Compressed Context Memory For Online Language Model Interaction

**Jang-Hyun Kim**, Junyoung Yeom, Sangdoo Yun<sup>†</sup>, Hyun Oh Song<sup>†</sup>  
*ICLR*, 2024

### [C5] Neural Relation Graph: A Unified Framework for Identifying Label Noise and Outlier Data

**Jang-Hyun Kim**, Sangdoo Yun, Hyun Oh Song  
*NeurIPS*, 2023

### [C4] Dataset Condensation via Efficient Synthetic-Data Parameterization

**Jang-Hyun Kim**, Jinuk Kim, Seong Joon Oh, Sangdoo Yun, Hwanjun Song, Joonhyun Jeong, Jung-Woo Ha, Hyun Oh Song  
*ICML*, 2022

### [J2] *spherepc*: An R Package for Dimension Reduction on a Sphere

Jongmin Lee, **Jang-Hyun Kim**, Hee-Seok Oh  
*The R Journal*, 2022

- [C3] Uncertainty-Based Offline Reinforcement Learning with Diversified Q-ensemble  
Gaon An\*, Seungyong Moon\*, **Jang-Hyun Kim**, Hyun Oh Song  
*NeurIPS*, 2021
- [C2] Co-Mixup: Saliency Guided Joint Mixup with Supermodular Diversity  
**Jang-Hyun Kim**, Wonho Choo, Hosan Jeong, Hyun Oh Song  
*ICLR Oral*, 2021
- [J1] Spherical Principal Curves  
Jongmin Lee\*, **Jang-Hyun Kim**\*, Hee-Seok Oh  
*TPAMI*, 2021
- [C1] Puzzle Mix: Exploiting Saliency and Local Statistics for Optimal Mixup  
**Jang-Hyun Kim**, Wonho Choo, Hyun Oh Song  
*ICML*, 2020
- [P2] Phase-Aware Speech Enhancement with Deep Complex U-Net  
Hyeong-Seok Choi, **Jang-Hyun Kim**, Jaesung Huh, Adrian Kim, Jung-Woo Ha, Kyogu Lee  
*arXiv*, 2019
- [P1] Multi-Domain Processing via Hybrid Denoising Networks for Speech Enhancement  
**Jang-Hyun Kim**\*, Jaejun Yoo\*, Sanghyuk Chun, Adrian Kim, Jung-Woo Ha  
*arXiv*, 2018

## Patents

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Image Recognition Method and Apparatus, Image Preprocessing Apparatus, and Method of Training Neural Network

- **Jang-Hyun Kim**, Hyun Oh Song, Hosan Jeong, Wonho Choo, Seungyong Moon, Gaon An
- Granted US patent, No. 11921818B2, 2024

## Open Sources

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Google’s Speaker Verification ★350+ ([GitHub](#), [Kaggle](#))

- TensorFlow implementation of “Generalized End-to-End Loss for Speaker Verification”

Puzzle Mix ★150+ ([GitHub](#))

- PyTorch implementation of “Puzzle Mix: Exploiting Saliency and Local Statistics for Optimal Mixup”

Co-Mixup ★100+ ([GitHub](#))

- PyTorch implementation of “Co-Mixup: Saliency Guided Joint Mixup with Supermodular Diversity”

Efficient Dataset Condensation ★100+ ([GitHub](#))

- PyTorch implementation of “Dataset Condensation via Efficient Synthetic-Data Parameterization”

Compressed Context Memory ★40+ ([GitHub](#))

- PyTorch implementation of “Compressed Context Memory For Online Language Model Interaction”

*spherepc* ([CRAN](#), [Document](#))

- R package of “Spherical Principal Curve”

## Honors and Awards

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Qualcomm Innovation Fellowship Korea [C2]	2021
Microsoft Research Asia Fellowship Nomination Award	2021
Youlchon AI Star Scholarship	2021
<b>First Prize</b> , Samsung Electronics & SNU Excellent Paper Award [C2]	2021
Korea Foundation for Advanced Studies (KFAS) Ph.D. Scholarship	2020-2024
<b>Honorable Mention</b> , Korean Statistics Society SG Poster Paper Award [J1]	2019

<b>Silver Medal</b> , Korean Contest of Mathematics for University Students	2017
Presidential Science Scholarship	2012-2019
<b>Gold Medal</b> , Korean Mathematical Olympiad (KMO)	2009

## Professional Services

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<b>Conference Reviewer</b>	NeurIPS 2021-, ICLR 2022-, ICML 2023-
<b>Program Committee</b>	NeurIPS Workshop, “Interpolation Regularizers and Beyond”, 2022 NeurIPS Workshop, “ImageNet: Past, Present, and Future”, 2021

## Talks

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<b>LG Tech Talk</b>	“A Unified Framework for Identifying Label Noise and Outlier Data”, Aug.2023
<b>SNU AI Retreat</b>	“Co-Mixup: Saliency Guided Joint Mixup with Supermodular Diversity”, Apr.2021
<b>SNU AI Retreat</b>	“Puzzle Mix: Exploiting Saliency and Local Statistics for Optimal Mixup”, Jul.2020

## Teaching

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<b>SNU, Undergraduate Research Program</b>	Research Mentor, Fall 2021
<b>SNU, Machine Learning</b>	Teaching Assistant, Fall 2021
<b>SNU, Introduction To Deep Learning</b>	Teaching Assistant, Spring 2020

## References

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<b>Hyun Oh Song</b>	Associate Professor, Computer Science and Engineering, SNU (hyunoh@snu.ac.kr)
<b>Sangdoo Yun</b>	Research Director, Naver AI Lab (sangdoo.yun@navercorp.com)
<b>Kyunghyun Cho</b>	Professor, Computer Science and Center for Data Science, NYU (kyunghyun.cho@nyu.edu)