

Sunwoo Kim

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Summary

PhD candidate in Intelligent Systems Engineering track in School of Informatics, Computing, and Engineering at Indiana University Bloomington. I investigate efficient machine learning and deep learning solutions for audio processing problems with my advisor Prof. Minje Kim. My current research focuses on novel modes of compression for source separation applications through personalization and scalable learning for practical deployment onto resource-constrained devices.

Work Experience

Amazon Lab126

APPLIED SCIENTIST INTERN

- Group: Audio Technology
- Supervisors: Trausti Kristjansson, Guangji Shi, Mrudula Athi
- Project: Personalized speech dereverberation

Sunnyvale, CA (Remote)

Jun. 2021 - Sep 2021

Amazon Lab126

APPLIED SCIENTIST INTERN

- Group: Audio Technology
- Supervisors: Trausti Kristjansson, Krishna Kamath, Yuzhou Liu
- Project: Model compression for speech enhancement

Sunnyvale, CA (Remote)

May. 2020 - Aug 2020

Qualcomm

INTERIM ENGINEERING INTERN

- Group: Audio Algorithms
- Supervisors: Laehoon Kim, Shuhua Zhang
- Project: Non-linear echo cancellation

San Diego, CA

May. 2019 - Aug 2019

Indiana University

TEACHING ASSISTANT

- Deep Learning Systems [Spring 2018]
- Machine Learning for Signal Processing [Fall 2017, Fall 2018]
- Software Engineering [Fall 2016, Spring 2017]

Bloomington, IN

Aug. 2016 - Dec 2018

National Center for Supercomputing Applications

CYBERGIS SPIN INTERN

- Parallel Terrain Analysis and predictive ecosystem mapping

Urbana, IL

May. 2015 - May 2016

Publications

Test-Time Adaptation Toward Personalized Speech Enhancement: Zero-Shot Learning with Knowledge Distillation

SUNWOO KIM, MINJE KIM

IEEE Workshop on Applications of Signal Processing to Audio and Acoustics (WASPAA)

New Paltz, NY

Oct 17-20, 2021

Personalized Speech Enhancement through Self-Supervised Data Augmentation and Purification

ASWIN SIVARAMAN, SUNWOO KIM, MINJE KIM

Interspeech

Brno, Czech Republic (Remote)

Aug 30 - Sep 3, 2021

Boosted Locality Sensitive Hashing: Discriminative Binary Codes For Source Separation

SUNWOO KIM, HAICI YANG, MINJE KIM (NOMINATED FOR THE BEST STUDENT PAPER AWARD)

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

Barcelon, Spain (Remote)

May 4-8, 2020

Incremental Binarization On Recurrent Neural Networks For Single-Channel Source Separation

SUNWOO KIM, MRINMOY MAITY, MINJE KIM

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

Brighton, UK

May 12-17, 2019

Education

Indiana University

PH.D. CANDIDATE IN INTELLIGENT SYSTEMS ENGINEERING

Advised by professor **Minje Kim**

Bloomington, IN

Aug 2016 - May 2022 (expected)

University of Illinois at Urbana-Champaign

B.S. IN PHYSICS

Urbana, IL

May 2016

Academic Services

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

CONFERENCE REVIEWER

2020, 2021

IEEE Transactions on Audio, Speech and Language Proceedings (TASLP)

JOURNAL REVIEWER

2021

European Association for Signal Processing (EURASIP) Journal on Audio, Speech, and Music Processing

JOURNAL REVIEWER

2019, 2020, 2021

Technical and Personal skills

Programming

PYTHON, C++, JAVA, R, MATLAB, BASH SCRIPTING

Software and Tools

TENSORFLOW, PYTORCH, KERAS, KALDI

Languages

FLUENT IN KOREAN AND ENGLISH. ABLE TO UNDERSTAND BASIC CHINESE (MANDARIN)