

# Minseok Kim

Ph.D. Student in Data Mining Lab  
Graduate School of Knowledge Service Engineering  
Korea Advanced Institute of Science and Technology (KAIST)  
✉ minseokkim@kaist.ac.kr 🌐 <http://minseokkim.net/>

## RESEARCH INTERESTS

- Recommendation System
- Information Retrieval
- Mobility Data
- Trustworthy ML
- Real-World ML/AI Challenges

## EDUCATION

### Korea Advanced Institute of Science and Technology (KAIST)

Daejeon, Korea

- Ph.D., Graduate School of Knowledge Service Engineering
- Adviser: Prof. Jae-Gil Lee

Sep 2018 – Aug 2022 (Expected)

### Korea Advanced Institute of Science and Technology (KAIST)

Daejeon, Korea

- M.S., Graduate School of Knowledge Service Engineering
- Adviser: Prof. Jae-Gil Lee
- Thesis: Temporal Interval Refinement for Point-of-Interest Recommendation

Sep 2016 – Aug 2018

### Hanyang University

Seoul, Korea

- B.S. in School of Computer Science and Engineering
- B.S. in College of Policy Science
- GPA: 4.21/4.50
- Graduated *Cum Laude*
- Early graduation of excellent students

Mar 2013 – Aug 2016

## RESEARCH EXPERIENCE

### Deep Learning Based Anomaly Detection in the Multi-dimensional Streaming Aircraft Data

- The Republic of Korea Air Force
- Research project manager
- Designed and developed a deep learning based anomaly detection method in the multi-dimensional streaming aircraft data

Sep 2019 –

### Deep Learning Based Anomaly Detection in the Trajectory Data for Tactical Command and Control

- Hanwha Corporation, Korea
- Research project manager
- Designed and developed a deep learning based anomaly detection method in the trajectory data

Sep 2018 –

### Customer Revisit Prediction Using Indoor Sensor Data

- Microsoft Research Asia
- Research assistant
- Performed thorough domain analysis and contributed developing a customer revisit prediction model.

Sep 2016 – Aug 2018

## AWARDS & SCHOLARSHIPS

- Qualcomm Innovation Award
- Participation of SLUSH as KAIST representative
- National scholarship for graduate studies, Korea Student Aid Foundation
- Scholarship for public activists, Pine Tree Foundation
- Full academic scholarship for gifted, Hanyang University

Dec 2019

Dec 2017

2016 – Present

2014 – 2016

2013 – 2016

## PUBLICATIONS

### International Conferences

[C5] Song, H., **Kim, M.**, Kim, S., and Lee, J., “Carpe Diem, Seize the Samples Uncertain “at the Moment” for Adaptive Batch Selection,” *In Proc. 29th ACM Int’l Conf. on Information and Knowledge Management (CIKM)*, Online, pp. 1385 – 1394, Oct. 2020 (full/oral presentation paper, acceptance rate: 21.0%).

[C4] **Kim, M.**, Kang, J., Kim, D., Song, H., Min, H., Nam, Y., Park, D., and Lee, J., “Hi-COVIDNet: Deep Learning Approach to Predict Inbound COVID-19 Patients and Case Study in South Korea,” *In Proc. 26th ACM SIGKDD Int’l Conf. on Knowledge Discovery and Data Mining (KDD)*, Online, pp. 3466 – 3473, Aug. 2020 (**top conference**, full/oral presentation paper, AI for COVID track)

- [C3] Song, H., **Kim, M.**, Park, D., and Lee, J., “How Does Early Stopping Help Generalization against Label Noise?” Workshop in conjunction with *Proc. 36th Int’l Conf. on Machine Learning (ICML)*, Online, July 2020
- [C2] Park, D., Song, H., **Kim, M.**, and Lee, J., “TRAP: Two-level Regularized Autoencoder-based Embedding for Power-law Distributed Data,” In *Proc. The Web Conference 2020 (TheWebConf)*, Taipei, Taiwan, Apr. 2020 (**top conference**, full/oral presentation paper, acceptance rate: 19.2%).
- [C1] Song, H., **Kim, M.**, and Lee, J., “SELFIE: Refurbishing Unclean Samples for Robust Deep Learning,” In *Proc. 36th Int’l Conf. on Machine Learning (ICML)*, Long Beach, California, June 2019 (**top conference** in machine learning area, full/oral presentation paper, acceptance rate: 22.6%).

#### International Journals

- [J2] Song, H., **Kim, M.**, Park, D., and Lee, J., “Learning from Noisy Labels with Deep Neural Networks: A Survey,” *Arxiv, Under review at IEEE Trans. Neural Networks and Learning Systems (TNNLS)*.
- [J1] Song, H., Kim, S., **Kim, M.**, and Lee, J., “Ada-Boundary: Accelerating DNN Training via Adaptive Boundary Batch Selection,” *Machine Learning*, Vol. 109, No. 9, pp. 1837 – 1853, Sep. 2020 (SCI Expanded, impact factor: 2.672). This paper was presented at the journal track of ECML-PKDD 2020.

**UNDER REVIEW & WORKING PAPERS** [U2] **Kim, M.**, Song, H., Kim, D., Shin, K., and Lee, J., “Premere: Meta-Reweighting via Self-Ensembling for Point-of-Interest Recommendation,” Under review at AAAI 2021, passed review phase 1.

[U1] Song, H., **Kim, M.**, Park, D., and Lee, J., “MORPH: Robust Learning by Self-Transition for Handling Noisy Labels,” Under review at AAAI 2021, passed review phase 1.

#### RELEASED DATASET

- Animal-10N dataset: A real-world noisy dataset of human-labeled online images for 10 animals.

#### TEACHING EXPERIENCE

- Deep Learning (KAIST IT academy): Winter 2019
- AI Program (Hankook Tire): Fall 2019
- Special AI Academy Program (Seocho-gu office, Korea): Summer-Winter 2019
- Data Processing & Visualization (KAIST IT academy): Summer 2019
- KAIST Advanced AI Academy (LG, Korea): Spring 2019
- Data Mining and Knowledge Discovery (KSE525 lecture TA, KAIST, Korea): Spring 2019
- Analytical Methodologies for Big Data (KSE526 lecture TA, KAIST, Korea): Fall 2018
- Big Data Professional Course (KB bank, Korea): Summer 2017

#### SKILLS & OTHERS

- Active problem formulation & solving leveraging AI/ML and data science
- Serving as graduate school representative (Jan 2020 – Present)
- Language skills: Korean (Native), English (Professional), Chinese and Japanese (Basic)
- Acknowledgements: Data Analysis (Kim, S. and Lee, J., ”Utilizing In-Store Sensors for Revisit Prediction,” In *Proc. 2018 IEEE Int’l Conf. on Data Mining (ICDM)*, Singapore, Nov. 2018)

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