KYUNGWOO SONG

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EDUCATION

KAIST, Daejeon, Korea *Mar. 2017 - Feb. 2021 (expected)*
Ph.D. in AAILab, ISysE (Industrial & Systems Engineering)
Advisor: Il-Chul Moon
Area : Sequence Modeling (Natural Language Processing, Recommender System), Bayesian Modeling

KAIST, Daejeon, Korea *Mar. 2015 – Feb. 2017*
M.S. in AAILab, ISysE
Advisor: Il-Chul Moon

KAIST, Daejeon, Korea *Feb. 2010 – Feb. 2015*
B.S. in Mathematical Science
B.S. in ISysE

PUBLICATIONS

Peer-Reviewed Papers

[1] **Kyungwoo Song**. Context Aware Sequence Modeling, IJCAI-PRICAI 2020 Doctoral Consortium.

[2] **Kyungwoo Song**, JoonHo Jang, Seung jae Shin, Il-Chul Moon. Bivariate Beta-LSTM. AAAI Conference on Artificial Intelligence (AAAI 2020). New York. Feb. 7-Feb. 12

[3] Su-Jin Shin, **Kyungwoo Song**, Il-Chul Moon. Hierarchically Clustered Representation Learning. AAAI Conference on Artificial Intelligence (AAAI 2020). New York. Feb. 7-Feb. 12

[4] Mingi Ji, Weonyoung Joo, **Kyungwoo Song**, Yoonyeong Kim, Il-Chul Moon. Sequential Recommendation with Context-aware Kernelized Self-Attention. AAAI Conference on Artificial Intelligence (AAAI 2020). New York. Feb. 7-Feb. 12

[5] **Kyungwoo Song***, Mingi Ji*, Sungrae Park, and Il-Chul Moon. Hierarchical Context enabled Recurrent Neural Network for Recommendation. AAAI Conference on Artificial Intelligence (AAAI 2019). Hawaii. Jan. 27-Feb. 1 (* Equal Contribution)

[6] Sungrae Park, **Kyungwoo Song**, Mingi Ji, Wonsung Lee, and Il-Chul Moon. Adversarial Dropout for Recurrent Neural Networks. AAAI Conference on Artificial Intelligence (AAAI 2019). Hawaii. Jan. 27-Feb. 1

[7] Il-Chul Moon, Jinhyung Tak, Sang-Hyeon Kim, and **Kyungwoo Song**. Ballistic Coefficient Estimation with Gaussian Process Particle Filter, 18th International Conference on Control, Automation and Systems (ICCAS 2018), Oct. 17–20, PyeongChang, GangWon, Korea

[8] **Kyungwoo Song**, Wonsung Lee, Il-Chul Moon. Neural Ideal Point Estimation Network. In The Thirty-Second AAAI Conference on Artificial Intelligence (AAAI 2018). New Orleans, Feb. 2-Feb. 7

[9] Il-Chul Moon, **Kyungwoo Song**, Sang-Hyeon Kim, and Han-Lim Choi. State Prediction of High-speed Ballistic Vehicles with Gaussian Process, International Journal of Control, Automation and Systems (IJCAS), 2018

[10] Wonsung Lee, **Kyungwoo Song**, Il-Chul Moon. Augmented Variational Autoencoders for Collaborative Filtering with Auxiliary Information. In The ACM International Conference on Information and Knowledge Management (CIKM 2017)

[11] **Kyungwoo Song**, Sang-Hyeon Kim, Jinhyung Tak, Han-Lim Choi, Il-Chul Moon. Data-driven ballistic coefficient learning for future state prediction of high-speed vehicles. In Information Fusion (FUSION), 2016 19th International Conference on (pp. 17-24). IEEE.

[12] **Kyungwoo Song**, Do-Hyeong Kim, Su-Jin Shin, Il-Chul Moon. Identifying the evolution of disasters and responses with network-text analysis. In Systems, Man and Cybernetics (SMC), 2014 IEEE International Conference (pp. 664-671).

Working Papers

[1] **Kyungwoo Song**, Yohan Jung, Dongjun Kim, Il-Chul Moon. Implicit Kernel Attention.

[2] Yohan Jung, **Kyungwoo Song**, Jinkyoo Park. Approximate Inference for Spectral Mixture Kernel.

[3] Dongjun Kim, Weonyoung Joo, Seungjae Shin, **Kyungwoo Song**, Il-Chul Moon. Adversarial Likelihood-Free Inference on Black-Box Generator.

[4] Seungjae Shin, **Kyungwoo Song**, Joonho Jang, Hyemi Kim, Weonyoung Joo and Il-Chul Moon. Neutralizing Gender Bias in Word Embedding with Latent Disentanglement and Counterfactual Generation.

[5] Yooon-Yeong Kim, **Kyungwoo Song**, JoonHo Jang, Il-chul Moon. Look-Ahead Acquisition with Informative Mixup for Active Learning.

[6] ByeongHu Na, Hyemi Kim, **Kyungwoo Song**, Weonyoung Joo, Yoonyeong Kim, Il-Chul Moon. Deep Generative Positive-Unlabeled Learning under Selection Bias.

AWARDS & SCHOLARSHIPS

KAKAO Research Supporting Program, 2018
AAAI-18 Student Scholar
SMC Student Travel Grant, 2014

INVITED TALKS

KAKAO, Korea *May 2018*
NAVER, Korea *April 2018*

SERVICES

Reviewer/Program Committee: IJCAI 2020, ACL 2020, CMOT 2020
Secondary Reviewer/Program Committee: IJCAI 2017

WORKING EXPERIENCE

KAIST, Daejeon, Korea *May 2019 - July 2019*
Teaching Assistant, Data Structure and Algorithm Introduction I & II, KOOC (online)

NAVER Clova, Seongnam, Korea *Oct. 2018 - Dec. 2018*
Visiting Researcher, Diverse Dialogue Generation

KAIST, Daejeon, Korea *Apr. 2018 - June 2018*
Teaching Assistant, Introduction to Artificial Intelligence and Machine Learning, KOOC (online)

KAIST, Daejeon, Korea *Sep. 2017 - Dec. 2017*
Teaching Assistant, Applied Data Structures, and Algorithms, ISysE

Hanbat National University, Daejeon, Korea *Mar. 2017 - June 2017*
Part-Time Lecturer, Operations Management, Business Administration

KAIST, Daejeon, Korea *Mar. 2016 - June 2016*
Teaching Assistant, Applications of AI/DM Technology, ISysE

KAIST, Daejeon, Korea *Sep. 2015 - Dec. 2015*
Teaching Assistant, Applied Data Structures, and Algorithms, ISysE

PROJECT

Automatic Classification for Customer Transaction History *Nov. 2019 - Mar. 2020*
funded by commercial bank in South Korea
Developed a classifier for customer's financial transactions such as payment, deposit, and credit card history. To handle the text data, we design a neural network with fastText and BERT.

Vision-based Quality Inspection *Mar. 2019 - Oct. 2019*
funded by tire company in South Korea
Developed an anomaly classifier and anomaly region detector for various types of tire dataset. For efficient region detection, we developed a patch-based sampling and classification.

Multi-language, multi-source, Polymorphic data analysis *July 2016 - Dec. 2017*
funded by National Research Foundation (NRF)
Developed a part-of-speech (POS) tagger with bidirectional LSTM and conditional random field (CRF). Developed a algorithm for relation extraction (RE), and entity resolution (ER) task for text dataset.

Estimation and Prediction of High-Speed Vehicle Trajectory *Mar. 2015 - June 2016*
funded by Agency for Defense Development (ADD)
Developed a trajectory estimation and prediction model with interacting multiple model (IMM), Kalman filter and Gaussian processes model.