

Seungwan Seo

Contact Information

Ph.D Candidate

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Education

Korea University

Ph.D candidate in Industrial Management

Seoul
2017 - current

Seoul Tech

Bachelor of Science in Information Technology and Management

Seoul
2011 - 2017

Research Interests

Adversarial Example

- Making human-imperceptible adversarial examples which is an instance with small, intentional feature perturbations that cause a machine learning model to make a false prediction
- Detection/defence a well made adversarial examples

Vision Process

- Image(video) classification, object detection and generation

Anomaly Detection

- Use anomaly detection to solve real world problems in domains with few target labels

Publications

Intrusion Detection based on Sequential Information preserving Log

Embedding Methods and Anomaly Detection Algorithms

Czangyeob Kim, Myeongjun Jang, **Seungwan Seo**, Kyeongchan Park, Pilsung Kang*
IEEE Access, IF: 3.745, Q1 Journal

[Original paper link](#) | [Download link](#)

2021

Unusual customer response identification and visualization based on text mining and anomaly detection

Seungwan Seo, Deokseong Seo, Myeongjun Jang, Jaeyun Jeong, Pilsung Kang*
Expert Systems with Applications, Volume 144, April 2020, 113111, IF: 5.452, Q1 Journal

[Original paper link](#) | [Download link](#)

2020

Comparative Study of Deep Learning-Based Sentiment Classification

Seungwan Seo, Czangyeob Kim, Haedong Kim, Kyoung Hyun Mo, Pilsung Kang*
IEEE Access, Volume 8, January 2020, Pages 6861 - 6875, IF: 3.745, Q1 Journal

[Original paper link](#) | [Download link](#)

2020

Recurrent neural network-based semantic variational autoencoder for Sequence-to-sequence learning

2019

Myeongjun Jang, **Seungwan Seo**, Pilsung Kang*

Information Sciences, Volume 490, July 2019, Pages 59-73, IF: 5.910, Q1 Journal

[Original paper link](#) | [Download link](#)

Sentiment classification with word localization based on weakly supervised learning with a convolutional neural network

2018

Gichang Lee, Jaeyun Jeong, **Seungwan Seo**, CzangYeob Kim, Pilsung Kang*

Knowledge-Based Systems Volume 152, 15 July 2018, Pages 70-82, IF: 5.921, Q1 Journal

[Original paper link](#) | [Download link](#)

Work in Progress

Cost-free Adversarial Defense: Distance-based optimization for model robustness without adversarial training

Under Review

Seungwan Seo, Yunseung Lee, Pilsung Kang*

Pattern Recognition, IF: 7.740, Q1 Journal

Conference

Cost-free Adversarial Defense: Distance-based optimization for model robustness without adversarial training

2021.06

Korean Institute of Industrial Engineers (Spring), Jeju Convention Center, Jeju

Seungwan Seo, Yunseng Lee, Pilsung Kang*

Intrusion detection based on sequential information preserving log embedding methods and anomaly detection algorithms

2019.11

INFORMS Annual Meeting, Seattle, WA

Seungwan Seo, Pilsung Kang*

Measuring Sentence Similarity based on Image Association and Siamese Network

2019.11

Korean Institute of Industrial Engineers (Fall), Seoul National University, Seoul

Seungwan Seo, Minsung Jeong, Heejeong Choi, Pilsung Kang*

Identifying and visualizing uncommon customer response on machine learning

2018.11

INFORMS Annual Meeting, Phoenix, Arizona

Seungwan Seo, Pilsung Kang*

Comparative Study of Deep Learning-Based Sentiment Classification

2018.04

Korean Institute of Industrial Engineers (Spring), Hyundai Hotel, Gyeongju

Seungwan Seo, Czangyeob Kim, Haedong Kim, Kyoungyun Mo, Pilsung Kang*

Unusual customer response identification and visualization based on text mining and anomaly detection

2018.04

Korean Institute of Industrial Engineers (Spring), Hyundai Hotel, Gyeongju

Seungwan Seo, Deokseong Seo, Myeongjun Jang, Jaeyun Jeong, Pilsung Kang*

Distance Decomposition for Variable Importance of Distance-based Novelty Detection

2018.04

Korean Institute of Industrial Engineers (Spring), Hyundai Hotel, Gyeongju

Seungwan Seo, Myeongjun Jang, Czangyeob Kim, Pilsung Kang*

Recurrent Neural Network-based Semantic Variational Autoencoder for Sequence to Sequence Learning Korean Institute of Industrial Engineers (Spring), Hyundai Hotel, Gyeongju Seungwan Seo, Myeongjun Jang, Pilsung Kang*	2018.04
Sentiment classification with word localization based on weakly supervised learning with a convolutional neural network Korean Institute of Industrial Engineers (Fall), KAIST, Daejeon Seungwan Seo, Gichang Lee, Jaeyun Jeong, Czangyeob Kim, Pilsung Kang*	2017.11

Projects

Research Projects

Data analysis and model development for digital transformation-based predictive maintenance platform development Hanwha System/ICT <ul style="list-style-type: none"> Detect fault prognosis of manufacture system 	2021.04 - current
Wave height, direction, and period prediction on ocean wave images Daewoo Shipbuilding & Marine Engineering Co., Ltd. <ul style="list-style-type: none"> Developing an advanced deep learning-based model for predicting Advanced deep learning-based for predicting wave height, direction, and period 	2020.12 - 2021.10
Fashion image detection and Recommendation model National Information Society Agency <ul style="list-style-type: none"> Develop fashion style classification model using image detection model 	2020.07 - 2020.12
Research on methodology for DeepFake video detection National Research Foundation of Korea <ul style="list-style-type: none"> Development of DeepFake video detection model through classification and anomaly detection 	2019.03 - 2021.02
Research on methodology to improve ocean unseen data classification accuracy Daewoo Shipbuilding & Marine Engineering Co., Ltd. <ul style="list-style-type: none"> Ocean image generation using GANs for improve ocean unseen data classification accuracy 	2019.09 - 2020.05
Research on noise-robustness pattern detection from game log NCSoft <ul style="list-style-type: none"> Consider only sequences that appear continuously, which was not possible with existing pattern detection methods 	2019.04 - 2019.09
Mesuring sentence similarity based on image association NCSoft <ul style="list-style-type: none"> Judging whether two sentences are similar through image association, just as a person judges whether two sentences are similar through associative action 	2018.06 - 2019.02
Detecting abnormal state of system based on machine learning Agency for Defense Development <ul style="list-style-type: none"> Detects abnormal conditions using RNN-based auto encoder 	2018.03 - 2019.03
Research on network abnormal communication identification technology based on unsupervised learning National Security Research Institute <ul style="list-style-type: none"> Detection of attack network communication using anomaly detection 	2018.03 - 2018.09
Sentiment analysis for news articles Signal Korea <ul style="list-style-type: none"> Development of deep learning-based model that classifies the polarity of news articles and comments 	2017.11 - 2018.04

Development of deep learning and text mining based VDS analysis system Hyundai <ul style="list-style-type: none"> Using Doc2Vec and novelty detection technique for VDS response, quantitative score calculation for each response 	2017.07 - 2018.01
Sentiment analysis and visualization of customers review data National Research Foundation of Korea <ul style="list-style-type: none"> Development of sentiment analysis model for Korean review data and construction of visualization site 	2017.04 - 2018.03

Company Projects

DX Expert project LG ens <ul style="list-style-type: none"> Team 1: Discharge capacity value prediction Team 2: Barcode Recognition-based Anomaly Detection 	2021.06.28 - 2021.10.??
i-TAP BMW bad wafer clustering SK hynix <ul style="list-style-type: none"> Wafer map clustering to find bad patterns 	2020.11.10 - 2019.12.15
Big Data Expert Training Course SK Hynix <ul style="list-style-type: none"> Team 1: FDC-based Production Process Response Prediction Team 2: Deep Learning-based Wafer Bit Map Classifier 	2020.02.03 - 2020.03.27
Data Analysis Expert Project LG Innotek <ul style="list-style-type: none"> Team 1: Development of machine learning based virtual metrology for sterilization simulator Team 2: Improving Epoxy coating quality by ensuring Epoxy quantitative discharge conditions 	2019.11.06 - 2019.12.10

Teaching Experiences

Deep Learning Course Fastcampus Full-time Lecture	Online course
Python Syntax Course LG Innotek Full-time Lecture	2021.07.5-6
Machine Learning and Deep Learning Course SK Hynix Full-time Lecture	2020.11.5, 10, 17, 24
Machine Learning and Deep Learning Course SK Hynix Full-time Lecture	2020.03.17, 18
Machine Learning with Python Korea Credit Bureau Full-time Lecture	2019.09.09
Machine Learning with Python Korea Credit Bureau Full-time Lecture	2019.08.26
Machine Learning and Deep Learning Course Samsung Electronics Full-time Lecture	2019.07.19

Machine Learning and Deep Learning Course

Samsung Electronics
Full-time Lecture

2019.07.15

Deep Learning for Text Domain

SeoulTech
Seminar

2019.02.22

Machine Learning and Deep Learning Course

Samsung Electronics
Full-time Lecture

2019.02.11

Python Syntax Course

Samsung Electronics
Full-time Lecture

2019.01.14

Reference

Pilsung Kang

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