Juyong Kim

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Education

Machine Learning Department, Carnegie Mellon University Sep. 2018 – Current
• Ph.D. student in Machine Learning
• Advisor: Prof. Pradeep Ravikumar, Prof. Jeremy C. Weiss

Vision & Learning Lab., Seoul National University Mar. 2016 – Feb. 2018
• M.S. in Computer Science and Engineering
• Advisor: Prof. Gunhee Kim

Seoul National University Mar. 2008 – Feb. 2015
• B.S. in Electrical and Computer Engineering(Summa Cum Laude)
• Received Best Engineering Graduate Student Award

Work and Research Experiences

Abridge Inc May. 2021 – Aug. 2021
• NLP Research Internship
• Working on Neural Language Generation with Clinical Conversation

Google Research May. 2020 – Aug. 2020
• Research Internship (Advisor: Santiago Ontañón, Joshua Ainsile)
• Working on compositional generalization tasks on NLP
• "Improving Compositional Generalization in Classification Tasks via Structure Annotations" (see Publication below)

AITRICS, Seoul, Korea Mar. 2018 – Jul. 2018
• Research Scientist Internship

Vision & Learning Lab., Seoul National University Sep. 2015 – Feb. 2018
• Research Assistant and Master student
• Working on deep learning (CNN), under the Supervision of Prof. Gunhee Kim(SNU) and Sungju Hwang(UNIST)
• "SplitNet: Learning to Semantically Split Deep Networks for Parameter Reduction and Model Parallelization", "Taxonomy-Regularized Semantic Deep Convolutional Neural Networks" (See Publications below)

IR-Link, Seoul, Korea Nov. 2012 – Jul. 2014
• Software Engineer (As alternative military service) / Mobile Web & Windows Application Development

ITWell, Seoul, Korea Sep. 2011 – Oct. 2012
• Software Engineer (As alternative military service) / Windows CE Application Development

Cyber-Physical Systems Lab., Seoul National University Jan. 2011 – Sep. 2011
• Undergraduate Researcher on Robotics, Computer Vision, under the Supervision of Prof. Songhwai Oh
• "Actionable Topological Mapping for Navigation Using Nearby Objects" (See Publications below)

Research Interests

• Machine Learning, Deep Learning Architecture (especially in CNN), Clinical Natural Language Processing, Computer Vision

Publications

International Conference

• **Juyong Kim**, A. Sharma, S. Shanbhogue, P. Ravikumar, and J. C. Weiss, "**AnEMIC: A Framework for Benchmarking ICD Coding Models**", in *Conference on Empirical Methods in Natural Language Processing (EMNLP, System Demonstrations)*, Aug. 2022.

• **Juyong Kim**, J. C. Weiss, P. Ravikumar, "**Context-Sensitive Spelling Correction of Clinical Text via Conditional Independence**", in *Conference on Health, Inference, and Learning (CHIL)*, Apr. 2022.

• **Juyong Kim**, P. Ravikumar, J. Ainslie, S. Ontañón, "**Improving Compositional Generalization in Classification Tasks via Structure Annotations**", in *Proceedings of the Association for Computational Linguistics (ACL)*, Aug. 2021 (Short Paper).

• **Juyong Kim**, L. Gong, J. Khim, J. C. Weiss, P. Ravikumar, "**Improved Clinical Abbreviation Expansion via Non-Sense-Based Approaches**", in *Machine Learning for Health (ML4H) NeurIPS Workshop*, Nov. 2020.

• **Juyong Kim**, Y. Park, G. Kim, S. Hwang, "***SplitNet*: Learning to Semantically Split Deep Networks for Parameter Reduction and Model Parallelization**", in *International Conference on Machine Learning (ICML)*, Aug. 2017.

• W. Goo, **Juyong Kim**, G. Kim, S. Hwang, "**Taxonomy-Regularized Semantic Deep Convolutional Neural Networks**", in *European Conference on Computer Vision (ECCV)*, Oct. 2016.

• J. Kim, **Juyong Kim**, S. You, Y. Oh, and S. Oh, "**Actionable Topological Mapping for Navigation Using Nearby Objects**," in *Proc. of the IEEE International Conference on Automation Science and Engineering (CASE),* Aug. 2012.

Honors and Awards

ILJU Overseas Ph.D. Scholarship Aug. 2018 – Current
• Supporting outstanding PhD students studying abroad.

Hyundai Motor Chung Mong-Goo Scholarship Mar. 2016 – Feb. 2018
• Full tuition & fees during my Master's degree program.

NVIDIA Deep Learning Contest 2016(Korea) Oct. 2016
• 2nd place in Free Topic.

Silver Prize in 25th Global Software Contest Exhibit Dec. 2013
• Hosted by Ministry of Science ICT and Future Planning, Korea.
• Mobile Voting Service (MVS - Korean)

National Science and Engineering Scholarship Mar. 2008 – Feb. 2015
• Full tuition & fees during my college life, Funded by Korea Student Aid Foundation.

Korea Physics Olympiad Dec. 2007
• Silver Medal

Teaching Experiences & Extracurricular Activities

Teaching Assistant, Carnegie Mellon University Spring, 2022
• 10-707 Advanced Deep Learning

Teaching Assistant, Carnegie Mellon University Fall, 2019
• 10-715 Advanced Introduction to Machine Learning

Teaching Assistant, Seoul National University Spring, 2016
• M1522.001000 Computer Vision

Skills

Relevant Coursework

• 10-715 Advanced Introduction to Machine Learning
• 10-716 Advanced Machine Learning
• 10-725 Convex Optimization
• 10-716 Deep Reinforcement Learning
• 36-708 ABCDE of Statistical Methods for ML
• 36-715 Intermediate Statistics
• 10-707 Topics in Deep Learning
• 10-731/732 Foundation of Causal Inference
• 16-726 Learning-based Image Synthesis

• 420.314 Introduction to Random Variables Processes
• 420.211 Programming Methodology
• 420.310 Fundamentals of Control Engineering
• 446.345 Introduction to Robot Engineering
• 420.405 Design Project for Electrical Devices & Systems
• 430.457 Introduction to Intelligent Systems
• 430.659 Topics in Computer and VLSI (Machine Learning)
• 4190.681A Genetic Algorithms
• 4190.678 Natural Language Processing
• 420.216 Linear Algebra for Electrical Systems
• 420.327 Data Structures and Algorithms
• 420.456 Advanced Control Techniques
• 4190.408 Artificial Intelligence
• 430.714 Estimation Theory
• 430.711A Introduction to Computer Vision
• 406.563 Convex Optimization
• M1522.001300 Probabilistic Graphical Models

Programming Language/Library

• C++, Java, Python, C#, MATLAB, Mathematica, SQL, Verilog.
• TensorFlow, Pytorch, Caffe, Theano, OpenCV, MFC, Web development, HTK Speech Recognition Toolkit, Android, etc.

(Last update: 01/20/2023)