

Juyong Kim

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[Google Scholar](#) / [Github](#)

Education

- Machine Learning Department, Carnegie Mellon University** Aug. 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 Ainslie)
 - Working on compositional generalization tasks on NLP
 - "Improving Compositional Generalization in Classification Tasks via Structure Annotations" (see Publication below)
- ATRICS, 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 • Supporting outstanding PhD students studying abroad.	Aug. 2018 – Current
Hyundai Motor Chung Mong-Goo Scholarship • Full tuition & fees during my Master’s degree program.	Mar. 2016 – Feb. 2018
NVIDIA Deep Learning Contest 2016(Korea) • 2 nd place in Free Topic.	Oct. 2016
Silver Prize in 25th Global Software Contest Exhibit • Hosted by Ministry of Science ICT and Future Planning, Korea. • Mobile Voting Service (MVS - Korean)	Dec. 2013
National Science and Engineering Scholarship • Full tuition & fees during my college life, Funded by Korea Student Aid Foundation.	Mar. 2008 – Feb. 2015
Korea Physics Olympiad • Silver Medal	Dec. 2007

Teaching Experiences & Extracurricular Activities

Teaching Assistant, Carnegie Mellon University • 10-707 Advanced Deep Learning	Spring, 2022
Teaching Assistant, Carnegie Mellon University • 10-715 Advanced Introduction to Machine Learning	Fall, 2019
Teaching Assistant, Seoul National University • M1522.001000 Computer Vision	Spring, 2016

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
- 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 Models
- 4190.678 Natural Language Processing
- 36-715 Intermediate Statistics
- 10-707 Topics in Deep Learning
- 10-731/732 Foundation of Causal Inference
- 16-726 Learning-based Image Synthesis
- 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)