Sang Keun Choe

✉ sangkeuc@cs.cmu.edu +1 (412) 315-1077 https://sangkeun00.github.io

Education

Carnegie Mellon University, Pittsburgh, PA, United States — 2020 -
Ph.D. in Computer Science (Language Technologies)
Advisor: Eric Xing

Carnegie Mellon University, Pittsburgh, PA, United States — 2018 - 2020
M.S. in Computer Science (Language Technologies) — CGPA: 4.08/4.33
Advisor: Jaime Carbonell

Seoul National University, Seoul, South Korea — 2011 - 2018
B.S. in Electrical Engineering & Mathematics, *Summa Cum Laude* — CGPA: 4.07/4.30

Publications

Pollux: Co-adaptive Cluster Scheduling for Goodput-Optimized Deep Learning
Aurick Qiao, Sang Keun Choe, Suhas Jayaram Subramanya, Willie Neiswanger, Qirong Ho, Hao Zhang, Greg Ganger, Eric Xing
In Submission, 2020

On Orthogonal Jacobian Regularization in Deep Neural Networks
Sang Keun Choe*, Hosan Jeong*, and Jaime Carbonell
In Workshop on Science meets Engineering of Deep Learning at NeurIPS, 2019

On Leveraging Visual Modality for Neural Machine Translation
Vikas Raunak*, Sang Keun Choe*, Yi Xu*, Quanyang Lu*, and Florian Metze
In INLG, 2019 (Short ver.: *Workshop on New Tasks for Vision and Language at ICML*, 2019)

On Leveraging Visual Modality for ASR Error Correction
Sang Keun Choe*, Vikas Raunak*, Quanyang Lu*, Yi Xu*, and Florian Metze
In Workshop on New Tasks for Vision and Language at ICML, 2019

Audio Cover Song Identification using Convolutional Neural Network
Juheon Lee, Sungkyun Chang, Sang Keun Choe, and Kyogu Lee
In ICASSP, 2018 (Short ver.: *Workshop on ML4Audio at NIPS*, 2017)

Research & Work Experience

Carnegie Mellon University, Research Assistant — Sep 2018 - Present
- Researched on neural networks optimization, especially closing the gap between first- and second-order optimization, using functional analysis and spectral theory
- Developed adaptive learning rate scaling for large-batch training with Adam-type optimizers based on stochastic differential equations and functional analysis

HodooAI, Research Engineer — Apr 2018 - Jul 2018
- Developed neural networks identifying fake images using GANs and Bayesian learning
- Implemented image style transfer algorithms and applied it to the make-up transfer application

Projects

Airplane Part Price Prediction, Boeing — 2019 - 2020
- Participated in developing random forest based regression models that predict optimal prices of various airplane parts (earned profits of >$1B for Boeing)

Honors & Awards

Kwanjeong Scholarship for Graduate Study ($30,000/yr) — 2018 - 2020
Best Undergraduate Engineering Student Award, Seoul National University — 2018
Presidential Scholarship for Science and Engineering Study, Korea — 2011 - 2017
Gold Award (Top 7), Korea Collegiate Mathematical Competition — 2011
Silver Award, Korea Mathematical Olympiad — 2010

Teaching

Artificial Intelligence: Representation and Problem Solving, Carnegie Mellon University — 2020

Academic Services

Reviewer of AISTATS 2020

Coursework

Introduction to Deep Learning, Deep Reinforcement Learning, Graduate AI, Neural Networks for NLP, Statistical Techniques for Robotics, Large-scale Multimedia Analysis, Machine Translation and Sequence-to-sequence Models, Algorithms for NLP, Information Theory, Convex Optimization

Skills

Python, Java, MATLAB, C/C++ | Git, Docker, Kubernetes