

# Sang (Keun) Choe

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🌐 <https://sangkeun00.github.io>

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EDUCATION	<b>Carnegie Mellon University</b> , United States Ph.D. in Computer Science (Language Technologies) Advisor: Eric Xing	Present
	<b>Carnegie Mellon University</b> , United States M.S. in Computer Science (Language Technologies) Advisor: Jaime Carbonell	Aug 2020 CGPA: 4.08/4.33
	<b>Seoul National University</b> , South Korea B.S. in Electrical Engineering & Mathematics, <i>Summa Cum Laude</i>	Feb 2018 CGPA: 4.07/4.30
EXPERIENCE	<b>Microsoft Research</b> , Research Intern - Improved training speed and final accuracy of (very) large mixture-of-experts (MoE) Transformers by scaling learning rates based on pre-conditioned gradient noise scale	Summer 2021
	<b>HoodooAI</b> , Research Engineer Intern - 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	Summer 2018
SOFTWARES	<b>Betty</b> , MultiLevel Optimization Library - Developed a PyTorch-based automatic differentiation library for multilevel optimization, which provides a unified programming interface for various applications including hyperparameter optimization, neural architecture search, reinforcement learning, adversarial learning, etc.	2022
PUBLICATIONS	<b>Betty: An Automatic Differentiation Library for Multilevel Optimization</b> <u>Sang Keun Choe</u> , Willie Neiswanger, Pengtao Xie, and Eric Xing <i>Preprint, 2022</i>	
	<b>Pollux: Co-adaptive Cluster Scheduling for Goodput-Optimized Deep Learning</b> Aurick Qiao, <u>Sang Keun Choe</u> , Suhas Jayaram Subramanya, Willie Neiswanger, Qirong Ho, Hao Zhang, Greg Ganger, Eric Xing <i>In OSDI, 2021 (Jay Lepreau Best Paper Award!)</i>	
	<b>On Orthogonal Jacobian Regularization in Deep Neural Networks</b> <u>Sang Keun Choe</u> <sup>*</sup> , Hosan Jeong <sup>*</sup> , and Jaime Carbonell <i>In Workshop on Science meets Engineering of Deep Learning at NeurIPS, 2019</i>	
	<b>On Leveraging Visual Modality for Neural Machine Translation</b> Vikas Raunak <sup>*</sup> , <u>Sang Keun Choe</u> <sup>*</sup> , Yi Xu <sup>*</sup> , Quanyang Lu <sup>*</sup> , and Florian Metzger <i>In INLG, 2019 (Short ver.: Workshop on New Tasks for Vision and Language at ICML, 2019)</i>	
	<b>On Leveraging Visual Modality for ASR Error Correction</b> <u>Sang Keun Choe</u> <sup>*</sup> , Vikas Raunak <sup>*</sup> , Quanyang Lu <sup>*</sup> , Yi Xu <sup>*</sup> , and Florian Metzger <i>In Workshop on New Tasks for Vision and Language at ICML, 2019</i>	
	<b>Audio Cover Song Identification using Convolutional Neural Network</b> Juheon Lee, Sungkyun Chang, <u>Sang Keun Choe</u> , and Kyogu Lee <i>In ICASSP, 2018 (Short ver.: Workshop on ML4Audio at NIPS, 2017)</i>	
AWARDS	<b>Sansom Presidential Scholarship</b> , Carnegie Mellon University	2021 - 2022
	<b>Kwanjeong Scholarship for Abroad Study</b> , Kwanjeong Educational Foundation	2018 - 2020
	<b>Best Undergraduate Engineering Student Award</b> , Seoul National University	2018
	<b>Presidential Scholarship for Science and Engineering Study</b> , Korea	2011 - 2017
	<b>Gold Award</b> (Top 7), Korea Collegiate Mathematical Competition	2011
	<b>Silver Award</b> , Korea Mathematical Olympiad	2010
TEACHING	Artificial Intelligence: Representation and Problem Solving	Spring 2020
ACADEMIC SERVICES	<b>Reviewer</b> : AISTATS 2020	
SKILLS	Python, MATLAB, Java, C/C++   Git, Docker, Kubernetes	