

# Hanbyul Lee

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EDUCATION	<b>Purdue University</b>	IN, USA
	PhD Candidate in Statistics	Aug. 2018 - Present
	<b>Seoul National University</b>	Seoul, Korea
HONORS AND AWARDS	MS in Statistics	Mar. 2016 - Feb. 2018
	BS in Statistics / BA in Media & Communication	Mar. 2011 - Feb. 2016
	<b>CIGP-Lynn Fellowship</b> , Purdue Graduate School, 2018-2019	
PUBLICATIONS	<b>First place, Ischemic Stroke Lesion Segmentation (ISLES) Challenge</b> , 19th International Conference on Medical Image Computing and Computer Assisted Intervention (MICCAI), 2016	
	<b>National Scholarship for Science and Engineering</b> , Korea Student Aid Foundation, 2011-2013	
	<b>[Published]</b>	
	<b>“Support Recovery in Sparse PCA with Incomplete Data.”</b> <u>Hanbyul Lee</u> , Qifan Song, Jean Honorio. Advances in Neural Information Processing Systems (NeurIPS), 2022.	
	<b>“On the Fundamental Limits of Exact Inference in Structured Prediction.”</b> <u>Hanbyul Lee</u> , Kevin Bello, Jean Honorio. IEEE International Symposium on Information Theory (ISIT), 2022.	
	<b>“Ensemble of Deep Convolutional Neural Networks for Prognosis of Ischemic Stroke.”</b> Youngwon Choi, Yongchan Kwon, <u>Hanbyul Lee</u> , Beom Joon Kim, Myunghee Cho Paik, and Joong-Ho Won. International Workshop on Brainlesion: Glioma, Multiple Sclerosis, Stroke and Traumatic Brain Injuries, 2017.	
	<b>[In-Preparation]</b>	
	<b>“Support Recovery in Sparse PCA with Non-Random Missing Data.”</b> <u>Hanbyul Lee</u> , Qifan Song, Jean Honorio. In preparation for ICML 2023.	
	<b>“Matrix Completion with Non-Random Missing Data.”</b> <u>Hanbyul Lee</u> , Qifan Song, Jean Honorio. In preparation for ICML 2023 or NeurIPS 2023.	
	<b>“Differentially-Private PCA with Incomplete Data.”</b> <u>Hanbyul Lee</u> , Qifan Song, Jean Honorio, Jordan Awan.	
RESEARCH EXPERIENCES	<b>PhD Student Researcher</b> Jan. 2022 - Present	Department of Statistics, Purdue University Advisor: Jean Honorio, Qifan Song
	<ul style="list-style-type: none"><li>Suggested convex optimization method to solve sparse PCA on incomplete data and provided theoretical and experimental justification</li></ul>	
	Jan. 2021 - Dec. 2021	Advisor: Jean Honorio

- Established fundamental limit bounds of exact inference in structured prediction under undirected graphical model

Jan. 2019 - Dec. 2020

Advisor: Faming Liang

- Estimated nonparametric finite mixture of regression models with sparse feed-forward neural networks

**Master Student Researcher**

Department of Statistics, Seoul National University

Aug. 2016 - Feb. 2018

Advisor: Joong-Ho Won

- Developed word2vec model to classify news articles involving economic sentiment or not
- Studied local quadratic and linear approximation methods for optimization of SCAD-penalized Support Vector Machine (M.Sc. Thesis)
- Developed CNN model for image segmentation to predict post-treatment ischemic stroke

TEACHING

STAT 301 - *Elementary Statistical Methods*, Purdue University

Exam Writer

Fall 2022

Lab TA

Fall 2019 - Spring 2022

STAT 519 - *Introduction to Probability Theory*, Purdue University

Grader

Fall 2019

TECHNICAL  
SKILLS

**Fluent** R, Python, MATLAB

**Moderate** C, SAS