

Jinghui Chen

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RESEARCH INTERESTS

Machine Learning, Optimization and Adversarial Machine Learning

EDUCATION

University of California, Los Angeles (UCLA) 09/2019 - Present
Ph.D. in Department of Computer Science
Advisor: Quanquan Gu

University of Virginia (UVa) 08/2015 - 06/2019
Ph.D. in Department of Computer Science
Advisor: Quanquan Gu

University of Science and Technology of China (USTC) 09/2011 - 06/2015
B.S. in Electronic Engineering and Information Science

RESEARCH EXPERIENCE

Microsoft 06/2020 - 09/2020
Research Intern
Building efficient and scalable robust training algorithms for large-scale practical systems in Microsoft.
• Mentor: Yu Cheng

Twitter 06/2019 - 08/2019
Machine Learning Intern
Improving the pipeline for Twitter user recommendation with deep neural networks.
• Mentor: Yao Wu

JD.COM Silicon Valley Research Center 05/2018 - 08/2018
Research Intern
Improving the efficiency and effectiveness of generating adversarial examples in black-box settings.
• Mentor: Jinfeng Yi

IBM T.J Watson Research Center 05/2016 - 08/2016
Research Intern
Building state-of-the-art outlier detection algorithm with deep autoencoder ensembles.
• Mentors: Saket Sathe, Charu Aggarwal

University of Hannover, Germany 02/2015 - 06/2015
Research Intern
Improving threshold selection by using calibrated probabilities for random forest classifier.
• Mentor: Florian Baumann

University of Birmingham 07/2014 - 09/2014
Research Intern

Learning context-dependent regions from human activities.

- Mentor: Lars Kunze

PUBLICATIONS

* Equal contributions

- [1] **Jinghui Chen**, Quanquan Gu, RayS: A Ray Searching Method for Hard-label Adversarial Attack, in Proc of the 26th ACM SIGKDD Conference on Knowledge Discovery and Data Mining (KDD), San Diego, CA, USA 2020.
- [2] **Jinghui Chen**, Dongruo Zhou, Yiqi Tang, Ziyang Yang, Yuan Cao and Quanquan Gu, Closing the Generalization Gap of Adaptive Gradient Methods in Training Deep Neural Networks, in Proc. of 29th International Joint Conference on Artificial Intelligence (IJCAI), Yokohama, Japan, 2020.
- [3] Xiao Zhang*, **Jinghui Chen***, Quanquan Gu and David Evans, Understanding the Intrinsic Robustness of Image Distributions using Conditional Generative Models, In Proc of the 23rd International Conference on Artificial Intelligence and Statistics (AISTATS), Palermo, Sicily, Italy, 2020
- [4] **Jinghui Chen**, Dongruo Zhou, Jinfeng Yi, Quanquan Gu, A Frank-Wolfe Framework for Efficient and Effective Adversarial Attacks, in Proc. of the 34th Conference on Artificial Intelligence (AAAI), New York, New York, USA, 2020
- [5] Pan Xu*, **Jinghui Chen***, Quanquan Gu, Global Convergence of Langevin Dynamics Based Algorithms for Nonconvex Optimization, In Proc. of the 32nd Advances in Neural Information Processing Systems (NeurIPS), Montréal, Canada, 2018 (**Spotlight, Top 3.5%**)
- [6] **Jinghui Chen**, Pan Xu, Lingxiao Wang, Jian Ma, Quanquan Gu, Covariate Adjusted Precision Matrix Estimation via Nonconvex Optimization, in Proc. of the 35th International Conference on Machine Learning (ICML), Stockholm, Sweden, 2018 (**Long Oral Presentation, Top 4.8%**)
- [7] **Jinghui Chen**, Quanquan Gu, Fast Newton Hard Thresholding Pursuit for Sparsity Constrained Nonconvex Optimization, in Proc of the 23rd ACM SIGKDD Conference on Knowledge Discovery and Data Mining (KDD), Halifax, Nova Scotia, Canada, 2017
- [8] **Jinghui Chen**, Saket Sathe, Charu Aggarwal, Deepak Turaga, Outlier Detection with Autoencoder Ensembles, in Proc of 2017 SIAM International Conference on Data Mining (SDM), Houston, Texas, USA
- [9] **Jinghui Chen**, Quanquan Gu, Stochastic Block Coordinate Gradient Descent for Sparsity Constrained Optimization, in Proc of the 32nd International Conference on Uncertainty in Artificial Intelligence (UAI), New York / New Jersey, USA, 2016
- [10] Florian Baumann, **Jinghui Chen**, Karsten Vogt, Bodo Rosenhahn, Improved threshold Selection by using Calibrated Probabilities for Random Forest Classifiers, 12th Conference on Computer and Robot Vision (CRV), Halifax, Nova Scotia, Canada, 2015

PREPRINTS & WORKSHOPS

- [1] Dongruo Zhou*, **Jinghui Chen***, Yuan Cao*, Yiqi Tang, Ziyang Yang, Quanquan Gu, On the Convergence of Adaptive Gradient Methods for Nonconvex Optimization, arXiv:1808.05671, 2020.
- [2] **Jinghui Chen** Yu Cheng, Zhe Gan, Quanquan Gu and Jingjing Liu, Efficient Robust Training via Backward Smoothing, arXiv:2010.01278, 2020.
- [3] Boxi Wu*, **Jinghui Chen***, Deng Cai, Xiaofei He and Quanquan Gu, Does Network Width Really Help Adversarial Robustness?, arXiv:2010.01279, 2020.

- [4] COVID-19 Forecast Hub Consortium, **Jinghui Chen**, Ensemble Forecasts of Coronavirus Disease 2019 (COVID-19) in the U.S., medRxiv:2020.08.19.20177493.
- [5] Difan Zou, Lingxiao Wang, Pan Xu, **Jinghui Chen**, Weitong Zhang and Quanquan Gu, Epidemic Model Guided Machine Learning for COVID-19 Forecasts in the United States, medRxiv:2020.05.24.20111989, 2020.
- [6] **Jinghui Chen**, Quanquan Gu, RayS: A Ray Searching Method for Hard-label Adversarial Attack, ICML 2020 Workshop on Uncertainty & Robustness in Deep Learning.
- [7] **Jinghui Chen**, Quanquan Gu, RayS: A Ray Searching Method for Hard-label Adversarial Attack, ECCV 2020 Workshop on Adversarial Robustness in the Real World.
- [8] **Jinghui Chen**, Lingxiao Wang, Xiao Zhang, Quanquan Gu, Robust Wirtinger Flow for Phase Retrieval with Arbitrary Corruption, arXiv:1704.06256, 2017.

TEACHING EXPERIENCES	Teaching Assistant	Fall 2020
	<i>Course: Introduction to Algorithms and Complexity (Undergrad)</i>	UCLA
	Head Teaching Assistant	Spring 2019
	<i>Course: Special Topics in Computer Science: Machine Learning (Undergrad)</i>	UVa
	Head Teaching Assistant	Fall 2018
	<i>Course: Special Topics in Computer Science: Machine Learning (Undergrad)</i>	UVa
	Guest Lecturer	Spring 2018
	<i>Course: Machine Learning (Grad)</i>	UVa
	Teaching Assistant	Spring 2017
	<i>Course: Discrete Event Simulation (Undergrad)</i>	UVa
INVITED TALKS	Teaching Assistant	Fall 2016
	<i>Course: Optimization for Machine Learning (Grad)</i>	UVa
	Teaching Assistant	Spring 2016
	<i>Course: Data Engineering (Undergrad)</i>	UVa
	Teaching Assistant	Fall 2015
	<i>Course: Practice and Application of Data Science (Grad)</i>	UVa
	Open Problems in Adversarial Robustness	
	C3.ai DTI Workshop on The Analytical Foundations of Deep Learning	10/2020
	Efficient Robust Training via Backward Smoothing	
	Microsoft Dynamics 365 AI Research	09/2020
	RayS: A Ray Searching Method for Hard-label Adversarial Attack	
	ECCV 2020 Workshop on Adversarial Robustness in the Real World	08/2020
	ACM SIGKDD Conference on Knowledge Discovery and Data Mining	08/2020
	User Similarity Improvements with Deep Neural Networks	
	Twitter SF Headquarter	08/2019
	Closing the Generalization Gap of Adaptive Gradient Methods in Training Deep Neural Networks	
	JD.COM Silicon Valley Research Center	08/2018
	Covariate Adjusted Precision Matrix Estimation via Nonconvex Optimization	
	International Conference on Machine Learning	07/2018
	Outlier Detection with Autoencoder Ensembles	
	SIAM International Conference on Data Mining	04/2017

**ACADEMIC
SERVICES**

Senior Program Committee

- International Joint Conference on Artificial Intelligence (IJCAI)

Program Committee

- AAAI Conference on Artificial Intelligence (AAAI)
- IEEE International Conference on Big Data (BigData)

Conference Reviewer

- International Conference on Machine Learning (ICML)
- Neural Information Processing Systems (NeurIPS)
- International Conference on Artificial Intelligence and Statistics (AISTATS)
- International Conference on Learning Representations (ICLR)

Journal Reviewer

- IEEE Transactions on Neural Networks and Learning Systems (TNNLS)
- IEEE Transactions on Circuits and Systems for Video Technology (TCSVT)
- IEEE Transactions on Knowledge and Data Engineering (TKDE)
- IEEE Access
- PLOS ONE
- Neurocomputing
- Pattern Recognition Letters
- Machine Learning

AWARDS

- UCLA Graduate Division Fellowship 09/2020
- KDD 2020 Student Travel Award 08/2020
- NeurIPS 2019 Student Travel Award 12/2019
- NeurIPS 2018 Student Travel Award 12/2018
- ICML 2018 Student Travel Award 07/2018
- KDD 2017 Student Travel Award 08/2017
- SDM 2017 Student Travel Award 04/2017
- AEGON-Industrial Fund Scholarship of Responsibility 09/2014
- National Second prize of Contemporary Undergraduate Mathematical Contest in Modeling 10/2013
- Outstanding Student Scholarship in Fundamental Science by Ministry of Education 09/2013
- Zhang Zongzhi Sci-Tech Scholarship 09/2013
- Outstanding Student Scholarship (gold award) 10/2012
- Outstanding Freshmen Scholarship (bronze award) 09/2011

**OPEN
SOURCE**

Core member for project Combating COVID-19
covid19.uclaml.org

Our prediction model has been adopted by the Centers for Disease Control and Prevention (CDC), the California COVID Assessment Tool (CalCat) by California Department of Public Health (CDPH), and the COVID-19 Forecast Hub by the Reich Lab of the University of Massachusetts Amherst.

Media coverage: UCLA Newsroom, FiveThirtyEight, TPM, POLITICO, CBS News

Contributor to COVID-19 Forecast Hub

<https://github.com/reichlab/covid19-forecast-hub>

Data source for the official CDC COVID-19 Forecasting page (<https://www.cdc.gov/coronavirus/2019-ncov/covid-data/forecasting-us.html>).

Main Contributor for Model Robustness, ADBD Leaderboard

<https://github.com/uclaml/RayS>

Main Contributor for Padam Repository

<https://github.com/uclaml/Padam>

Main Contributor for Frank-Wolfe Adversarial Attack Repository

<https://github.com/uclaml/Frank-Wolfe-AdvML>