

# Jinghui Chen

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<https://jinghuichen.github.io/>

## 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 adversarial 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 on generating adversarial examples.

- 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 32th 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] 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.
- [2] **Jinghui Chen**, Quanquan Gu, RayS: A Ray Searching Method for Hard-label Adversarial Attack, ICML 2020 Workshop on Uncertainty & Robustness in Deep Learning.

- [3] **Jinghui Chen**, Quanquan Gu, RayS: A Ray Searching Method for Hard-label Adversarial Attack, ECCV 2020 Workshop on Adversarial Robustness in the Real World.
- [4] **Jinghui Chen**, Lingxiao Wang, Xiao Zhang, Quanquan Gu, Robust Wirtinger Flow for Phase Retrieval with Arbitrary Corruption, arXiv:1704.06256, 2017.

<b>TEACHING EXPERIENCES</b>	<b>Teaching Assistant</b>	Fall 2020
	<i>Course: Introduction to Algorithms and Complexity (Undergrad)</i>	UCLA
	<b>Head Teaching Assistant</b>	Spring 2019
	<i>Course: Special Topics in Computer Science: Machine Learning (Undergrad)</i>	UVa
	<b>Head Teaching Assistant</b>	Fall 2018
	<i>Course: Special Topics in Computer Science: Machine Learning (Undergrad)</i>	UVa
	<b>Guest Lecturer</b>	Spring 2018
	<i>Course: Machine Learning (Grad)</i>	UVa
	<b>Teaching Assistant</b>	Spring 2017
	<i>Course: Discrete Event Simulation (Undergrad)</i>	UVa
<b>INVITED TALKS</b>	<b>Teaching Assistant</b>	Fall 2016
	<i>Course: Optimization for Machine Learning (Grad)</i>	UVa
	<b>Teaching Assistant</b>	Spring 2016
	<i>Course: Data Engineering (Undergrad)</i>	UVa
	<b>Teaching Assistant</b>	Fall 2015
	<i>Course: Practice and Application of Data Science (Grad)</i>	UVa
	<b>RayS: A Ray Searching Method for Hard-label Adversarial Attack</b>	
	ACM SIGKDD Conference on Knowledge Discovery and Data Mining	08/2020
	<b>User Similarity Improvements with Deep Neural Networks</b>	
	Twitter SF Headquarter	08/2019
<b>ACADEMIC SERVICES</b>	<b>Closing the Generalization Gap of Adaptive Gradient Methods in Training Deep Neural Networks</b>	
	JD.COM Silicon Valley Research Center	08/2018
	<b>Covariate Adjusted Precision Matrix Estimation via Nonconvex Optimization</b>	
	International Conference on Machine Learning	07/2018
	<b>Outlier Detection with Autoencoder Ensembles</b>	
	SIAM International Conference on Data Mining	04/2017
	<b>Nonconvex Statistical Learning Methods</b>	
	UVA CDDA Workshop	04/2016
	<b>Program Committee</b>	
	<ul style="list-style-type: none"> <li>• AAAI Conference on Artificial Intelligence (AAAI)</li> <li>• IEEE International Conference on Big Data (BigData)</li> <li>• International Joint Conference on Artificial Intelligence (IJCAI)</li> </ul>	
<b>ACADEMIC SERVICES</b>	<b>Conference Reviewer</b>	
	<ul style="list-style-type: none"> <li>• International Conference on Machine Learning (ICML)</li> <li>• Neural Information Processing Systems (NeurIPS)</li> <li>• International Conference on Artificial Intelligence and Statistics (AISTATS)</li> </ul>	

- 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
- “Xing Ye” Scholarship 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” Scientific Scholarship 09/2013
- Honorable Mention of Mathematical Contest in Modeling 04/2013
- Outstanding Student Scholarship (gold award) 10/2012
- Outstanding Freshmen Scholarship (bronze award) 09/2011

#### OPEN SOURCE

**Core member** for project Combating COVID-19

[covid19.ucml.org](https://github.com/ucml/covid19)

Our prediction model has been adopted by Centers for Disease Control and Prevention (CDC), 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.

**Contributor** to COVID-19 Forecast Hub

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

**Main Contributor** for Model Robustness, ADBD Leaderboard

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

**Main Contributor** for Padam Repository

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

**Main Contributor** for Frank-Wolfe Adversarial Attack Repository

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