

Deqing Fu

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Education	University of Southern California <i>Ph.D. in Computer Science</i> Advisors: Vatsal Sharan & Robin Jia	2022 - Present
	Simons Institute at UC Berkeley <i>Visiting Graduate Student</i> Program: Modern Paradigms in Generalization	Fall 2024
	University of Chicago <i>M.S. in Statistics</i>	2020 - 2022
	University of Chicago <i>B.S. in Mathematics with Honors</i> <i>B.S. in Computer Science with Honors</i> <i>B.A. in Statistics</i>	2016 - 2020
Experience	Research Scientist Intern \rightarrow Student Researcher , Meta Team: Llama Team @ Meta GenAI. Host: Lawrence Chen; Peers: Tong Xiao, Rui Wang, and Pengchuan Zhang.	May – Dec., 2024
	Software Engineering Intern , Google Teams: Image Search (Lens); Knowledge Engine; Bard Multilingual.	Summer 2021, 2022, 2023
	Summer Student Researcher , Argonne National Laboratory Hosts: Paul Hovland & Sri Hari Krishna Narayana.	Summer 2017
Selected Publications	Transformers Learn to Achieve Second-Order Convergence Rates for In-Context Linear Regression Deqing Fu, Tian-Qi Chen, Robin Jia, Vatsal Sharan <i>SoCalNLP Symposium 2023 Best Paper Award</i>	NeurIPS 2024
	Pre-trained Large Language Models Use Fourier Features to Compute Addition Tianyi Zhou, <u>Deqing Fu</u> , Vatsal Sharan, Robin Jia	NeurIPS 2024
	IsoBench: Benchmarking Foundation Models on Isomorphic Representations <u>Deqing Fu</u> [*] , Ruohao Guo [*] , Ghazal Khalighinejad [*] , Ollie Liu [*] , Bhuwan Dhingra, Dani Yogatama, Robin Jia, Willie Neiswanger	COLM 2024

All Papers

* denotes
equal contribution

VisualLens: Personalization through Visual History

Wang Bill Zhu, Deqing Fu, Kai Sun, Yi Lu, Zhaojiang Lin, Seungwhan Moon, Kanika Narang, Mustafa Canim, Yue Liu, Anuj Kumar, Xin Luna Dong

Under Review

TLDR: Token-Level Detective Reward Model for Large Vision Language Models

Deqing Fu, Tong Xiao, Rui Wang, Wang Zhu, Pengchuan Zhang, Guan Pang, Robin Jia, Lawrence Chen

ICLR 2025

Transformers Learn Low Sensitivity Functions: Investigations and Implications

Bhavya Vasudeva*, Deqing Fu*, Tianyi Zhou, Elliot Kau, You-Qi Huang, Vatsal Sharan

ICLR 2025

DeLLMa: Decision Making Under Uncertainty with Large Language Models

Ollie Liu*, Deqing Fu*, Dani Yogatama, Willie Neiswanger

ICLR 2025

DreamSync: Aligning Text-to-Image Generation with Image Understanding Feedback

Jiao Sun*, Deqing Fu*, Yushi Hu*, Su Wang, Royi Rassin, Da-Cheng Juan, Dana Alon, Charles Herrmann, Sjoerd van Steenkiste, Ranjay Krishna, Cyrus Rashtchian

NAACL 2025

Transformers Learn to Achieve Second-Order Convergence Rates for In-Context Linear Regression

Deqing Fu, Tian-Qi Chen, Robin Jia, Vatsal Sharan

SoCalNLP Symposium 2023 Best Paper Award

NeurIPS 2024

Pre-trained Large Language Models Use Fourier Features to Compute Addition

Tianyi Zhou, Deqing Fu, Vatsal Sharan, Robin Jia

NeurIPS 2024

IsoBench: Benchmarking Foundation Models on Isomorphic Representations

Deqing Fu*, Ruohao Guo*, Ghazal Khalighinejad*, Ollie Liu*, Bhuwan Dhingra, Dani Yogatama, Robin Jia, Willie Neiswanger

COLM 2024

SCENE: Self-Labeled Counterfactuals for Extrapolating to Negative Examples

Deqing Fu, Ameya Godbole, Robin Jia

EMNLP 2023

Harnessing the Conditioning Sensorium for Improved Image Translation

	Cooper Nederhood, Nicholas Kolkin, <u>Deqing Fu</u> , Jason Salavon	ICCV 2021
Awards	SoCalNLP Symposium 2023 Best Paper Award , SoCalNLP	2023
	Provost's Fellowship , University of Southern California	2022
	Susanne H. Rudolph Scholarship , University of Chicago	2020
	Liew Family College Research Fellows Fund , University of Chicago	2020
	Dean's List , University of Chicago	2016-2020
Services	Reviewer for ICLR 2025, NeurIPS 2024, COLM 2024, EMNLP (2023, 2024), ACL ARR 2024, ECCV 2022, CVPR (2023, 2024, 2025)	
	Organizer of USC AI Safety Club	Jan 2024 – Present
Students Supervised	Master's and Undergraduate Students	
	Gustavo Carvalho (USC MS)	Feb 2024 – Present
	Qilin Ye (USC UG → Duke MS)	Sep 2023 – Present
	Woody Gan (USC UG)	Sep 2023 – Present
	You-Qi Huang (USC UG)	Sep 2023 – Mar 2024
	Elliot Kau (USC MS)	Sep 2023 – Mar 2024
	Tian-Qi Chen (USC MS)	Mar 2023 – Sep 2023
Teaching Experience	Teaching Assistant , CSCI 467: Introduction to Machine Learning University of Southern California, Los Angeles, CA	Spring 2025
	Teaching Assistant , CSCI 566: Deep Learning and its Applications University of Southern California, Los Angeles, CA	Spring 2023
	Teaching Assistant , BUSN 41301: Statistical Insight University of Chicago, Chicago, IL	Fall 2021
	Grader , CMSC 31230: Fundamentals of Deep Learning University of Chicago, Chicago, IL	Fall 2021
	Grader , STAT 24620: Multivariate Statistics and Data Analysis University of Chicago, Chicago, IL	Spring 2020
	Grader , MATH 20100: Mathematical Methods for Physical Science University of Chicago, Chicago, IL	Winter 2019
	Grader , MATH 19520: Mathematical Methods for Social Science University of Chicago, Chicago, IL	Fall 2018
	Grader , MATH 20300: Analysis in \mathbb{R}^n - I University of Chicago, Chicago, IL	Spring 2018
	Course Assistant , MATH 15300: Calculus - III	

University of Chicago, Chicago, IL Winter 2018

Course Assistant, MATH 15200: Calculus - II
University of Chicago, Chicago, IL Fall 2017

Invited Talks

Guest Lecture on Interpretability and AI Safety
DSO 575: Driving Business Transformation with GenAI Oct 24, 2024

Simplicity Bias of Transformers to Learn Low Sensitivity Functions
USC NLP Lunch Feb 22, 2024

Aligning Text-to-Image Generation with Image Understanding Feedback
USC NLP Lunch Oct 19, 2023

*Transformers Learn to Achieve Second-Order Convergence Rates for In-Context
Linear Regression*
USC NLP Lunch Mar 29, 2023

Skills

C/C++, Python, L^AT_EX, MATLAB, R, Java, CUDA
PyTorch, TensorFlow, Keras, JAX, HuggingFace