# Chudi Zhong

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RESEARCH INTERESTS

My research focuses on developing **interpretable machine learning** algorithms and pipelines to facilitate human-model interaction for high-stakes decision-making problems. I have solved fundamental problems in interpretable machine learning, allowing very simple models to achieve performance comparable with that of black boxes in a very fast and scalable way. I have introduced **a new paradigm for machine learning,** called **learning Rashomon sets**, to break the interaction bottleneck between users and ML algorithms by finding and storing *all* models within ε of the optimal loss. I have published multiple papers in NeurIPS, ICML, AAAI, AISTATS, IEEE VIS, and Statistics Surveys.

ACADEMIC POSITION

**University of North Carolina at Chapel Hill** — Chapel Hill, NC
Assistant Professor — July 2024 –
School of Data Science and Society
Department of Statistics and Operations Research

EDUCATION

**Duke University** — Durham, NC
Ph.D. in Computer Science — 2020 – 2024
Thesis: Interpretability and Multiplicity: a Path to Trustworthy Machine learning

M.S. in Statistical Science — 2018 – 2020

**University of North Carolina at Chapel Hill** — Chapel Hill, NC
B.S. in Statistics and Information Science — 2014 – 2018

SELECTED AWARDS

**Second Place, Bell Labs Prize**, 2023
The Bell Labs Prize is an international competition to solicit game changing and impactful ideas that have the potential to change the way people live, work, and communicate with each other. Among 107 proposals received in 2023, our team won the second place in the Bell Labs Prize.
**Rising Stars in Data Science**, University of Chicago, 2023
**Outstanding Ph.D. Preliminary Research Award**, Duke Computer Science, 2023
**Finalist**, Data Mining Best Student Paper Award, INFORMS, 2022

PUBLICATIONS

(* indicates co-first authors, equal contribution)

[1] **Chudi Zhong**, Panyu Chen, Cynthia Rudin. Models That Are Interpretable but Not Transparent. In *International Conference on Artificial Intelligence and Statistics (**AISTATS**)*, 2025.

[2] Cynthia Rudin, **Chudi Zhong**, Lesia Semenova, Margo Seltzer, Ronald Parr, Jiachang Liu, Srikar Katta, Jon Donnelly, Harry Chen, Zachery Boner. The Amazing Things that Come From Having Many Good Models. In *International Conference on Machine Learning (**ICML**)*, 2024. (**Spotlight**)

[3] **Chudi Zhong***, Zhi Chen*, Jiachang Liu, Margo Seltzer, Cynthia Rudin. Exploring and Interacting with the Set of Good Sparse Generalized Additive Models. In *Advances in Neural Information Processing Systems (**NeurIPS**)*, 2023.

[4] Jiachang Liu, Sam Rosen, **Chudi Zhong**, Cynthia Rudin. OKRidge: Scalable Optimal k-Sparse Ridge Regression for Learning Dynamical Systems. In *Advances in Neural Information Processing Systems (**NeurIPS**)*, 2023. (**Spotlight**)

[5] Rui Xin*, **Chudi Zhong***, Zhi Chen*, Takuya Takagi, Margo Seltzer, Cynthia Rudin. Exploring the Whole Rashomon Set of Sparse Decision Trees. In *Advances in Neural Information Processing Systems (**NeurIPS**)*, 2022. (**Oral**)

- **Finalist, Data Mining Best Student Paper Award, INFORMS, 2022**

[6] Jiachang Liu*, **Chudi Zhong***, Boxuan Li, Margo Seltzer, Cynthia Rudin. FasterRisk: Fast and Accurate Interpretable Risk Scores. In *Advances in Neural Information Processing Systems (**NeurIPS**)*, 2022.

[7] Zijie Wang, **Chudi Zhong**, Rui Xin, Takuya Takagi, Zhi Chen, Duen Horng Chau, Cynthia Rudin, Margo Seltzer. TimberTrek: Exploring and Curating Trustworthy Decision Trees with Interactive Visualization. In *IEEE Visualization and Visual Analytics (**VIS**)*, 2022.

[8] Jiachang Liu, **Chudi Zhong**, Margo Seltzer, Cynthia Rudin. Fast Sparse Classification for Generalized Linear and Additive Models. In *International Conference on Artificial Intelligence and Statistics (**AISTATS**)*, 2022.

[9] Hayden McTavish*, **Chudi Zhong***, Reto Achermann, Ilias Karimalis, Jacques Chen, Cynthia Rudin, Margo Seltzer. Fast Sparse Decision Tree Optimization via Reference Ensembles. In *AAAI Conference on Artificial Intelligence (**AAAI**)*, 2022.

[10] Cynthia Rudin, Chaofan Chen, Zhi Chen, Haiyang Huang, Lesia Semenova, **Chudi Zhong**. Interpretable Machine Learning: Fundamental Principals and 10 Grand Challenges. *Statistics Surveys*, 2022.

[11] Jimmy Lin*, **Chudi Zhong***, Diane Hu, Cynthia Rudin, Margo Seltzer. Generalized and Scalable Optimal Sparse Decision Trees. In *International Conference on Machine Learning (**ICML**)*, 2020.

INVITED TALKS

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| FRG Series, UNC-Chapel Hill | 2024 |
| School of Business, Purdue University, | 2024 |
| School of Information Sciences Colloquium, UIUC | 2024 |
| ASSET Seminar, University of Pennsylvania | 2024 |
| Statistics and Operations Research Colloquium, UNC-Chapel Hill | 2024 |
| Computer Science and Philosophy AI Workshop, UNC-Chapel Hill | 2023 |
| Rising Stars in Data Science, University of Chicago | 2023 |
| Tippie College of Business, University of Iowa | 2023 |
| INFORMS Annual Meeting | 2023 |
| Cornell ORIE Young Researcher Workshop (poster) | 2023 |
| Publisher-centric Science Talks, Amazon | 2023 |
| Interpretability in AI Workshop, Banff International Research Station | 2022 |
| INFORMS Annual Meeting | 2021 |

SERVICE

**Panelist**: Harnessing AI for Material Symposium, Duke University, 2024
**Organizer**: “Making Models We Can Understand: An Interactive Introduction to Interpretable Machine Learning”, International Conference on Computational Social Science, 2024
**Chair**: “Advancing Interpretable Machine Learning: Novel Approaches and Applications”, INFORMS Annual Meeting, 2023
**Area Chair**: InterpretableAI Workshop, NeurIPS 2024
**Conference Reviewer**: AISTATS 2021, 2022, 2023, ICML 2022, COLT 2023, NeurIPS 2023, 2024, AAAI 2025

**Journal Reviewer**: Annals of Applied Statistics, Journal of the Royal Statistical Society Series B, Operations Research

TEACHING

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| DATA 110: Introduction to Data Science | Spring 2025 |
| STOR 520: Statistical Computing for Data Science | Fall 2024 |
| TA, COMPSCI 671D, Machine Learning | Fall 2022 |
| TA, COMPSCI 527, Computer Vision | Spring 2022 |
| TA, STA 663L, Statistical Computation | Spring 2020 |

MENTORING

Tony Cao, undergraduate, Duke University
Ethan Hsu, undergraduate, Duke University
Xin Zheng, master, Duke University
Shihan Feng, master, Duke University
Prithika Roy, undergraduate, UNC-Chapel Hill
Jason Yi, undergraduate, UNC-Chapel Hill
Panyu Chen, master student, Duke University
Rui Xin, undergraduate, Duke University (now PhD student at University of Washington)
Boxuan Li, undergraduate, Duke University (now PhD student at Columbia University)
Diane Hu, undergraduate, Duke University (now working in industry)