

RUI ZHANG

PHD CANDIDATE IN COMPUTER SCIENCE

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EDUCATION

Duke University

Durham, NC

Ph.D in Computer Science

Sep. 2020 - Present

- Interpretable Machine Learning Lab
- Advisor: **Prof. Cynthia Rudin**

University of British Columbia

Vancouver, BC

Bachelor of Science in Computer Science (**Honors**)

Sep. 2016 - May. 2020

- Graduated with Distinction
- GPA: 3.94/4.0

INTERNSHIP EXPERIENCE

Systopia Lab, UBC

Vancouver, BC

Machine Learning and Data Mining Intern

Apr. 2019 - Sep. 2019

- Investigated existing summarization methods in data warehousing.
- Designed a fast dynamic-programming algorithm to construct the most concise tree-structured summary for hierarchical multidimensional data.
- Supervised by **Prof. Margo Seltzer** and **Prof. Laks V.S. Lakshmanan**.

PUBLICATIONS

R. Zhang, R. Xin, M. Seltzer, and C. Rudin, “Optimal sparse survival trees,” in *International Conference on Artificial Intelligence and Statistics*, PMLR, 2024.

R. Zhang*, R. Xin*, M. Seltzer, and C. Rudin, “Optimal sparse regression trees,” in *Proceedings of the AAAI Conference on Artificial Intelligence*, 2023.

Q. Huang*, **R. Zhang***, and S. Fan*, “Knowledge distillation to increase robustness under natural distribution shift and distance measurement of shifts,” Duke University, Tech. Rep., 2021.

R. Zhang, “An personalized experimenter platform for eye-tracking-based user adaptation,” University of British Columbia, 2020.

RESEARCH PROJECTS

Decision Tree Optimization & Tree Rashmon Set Search

Sep. 2021 - Now

- Developed algorithms that can quickly produce optimal sparse decision trees for various generalized tasks on large-scale datasets. These high-quality trees are no worse than black-box models.
- Developed trustworthy frameworks which can efficiently find the set of all near-optimal models (Rashmon set) and visualize the set.

Interpretable Survival Analysis

Sep. 2022 - Now

- Developed accurate, fast and interpretable machine learning models for survival analysis.
- Currently focus on optimal survival trees and generalized additive models.

PROFESSIONAL SERVICES

Reviewer Journal of Machine Learning Research (JMLR).

TEACHING

2023	COMPSCI 590: Data Science, Graduate Teaching Assistant	Duke
2022	COMPSCI 671: Theory & Alg ML, Graduate Teaching Assistant	Duke
2019, 2020	CPSC 404: Advanced Relational DB, Undergraduate Teaching Assistant	UBC
2019	CPSC 304: Intro to Relational DB, Undergraduate Teaching Assistant	UBC
2018	CPSC 213: Intro to Computer Systems, Undergraduate Teaching Assistant	UBC

HONORS AND AWARDS

2018, 2019	Trek Excellence Scholarship (top 5%)	UBC
2018, 2019	Faculty of Science International Student Scholarship	UBC
2018	Charles and Jane Banks Scholarship	UBC
2018	Science Scholar	UBC
2018	Dean's Honour List	UBC
2016	Outstanding International Student Award	UBC

TECHNICAL SKILLS

Languages C/C++, Python, Pytorch, Java, R, Haskell.

Web JavaScript, PHP, HTML, CSS, Node.js.

Database Database management systems (MySQL, Oracle, SQLite), Data warehousing.