

Alicia Ren

Postdoctoral Researcher in Machine Learning
Department of Computer Science, University of Toronto
✉ alicia.ren@example.edu | 📧 aliciaren | 🌐 aliciaren

RESEARCH INTEREST

Robust and calibrated machine learning under distribution shift, with a focus on structured prediction problems in scientific applications.

EDUCATION

2016 – 2021	University of Toronto PhD in Computer Science	Advisor: Prof. Daniel Voss
2012 – 2016	McGill University BSc in Computer Science and Mathematics	

PUBLICATIONS

References

- [1] **Robust feature selection under distribution shift.**
Journal of Machine Learning Research, 23:1–28, 2022.
Ren, Alicia and Voss, Daniel.
- [2] **Calibrated uncertainty estimates for structured prediction.**
In *Proceedings of the International Conference on Machine Learning*, pages 512–521, 2021.
Ren, Alicia.

RESEARCH EXPERIENCE

Calibration Under Shift	2021 – present
<i>Postdoctoral Researcher advised by Prof. Daniel Voss</i>	<i>University of Toronto</i>

- Developed calibration methods for structured prediction models deployed on out-of-distribution scientific data.
- Publication: [1]

Feature Robustness	2016 – 2021
<i>PhD Candidate</i>	<i>University of Toronto</i>

- Studied feature-selection stability under covariate shift for high-dimensional biomedical data.
- Publication: [2]

WORKING EXPERIENCE

Jul 2021 – Present	Postdoctoral Researcher for Prof. Daniel Voss <i>Department of Computer Science, Toronto, ON</i> Publication: [1]
May 2019 – Aug 2019	Research Intern Applied Science Team <i>Amazon, Seattle, WA</i> Worked on calibration for demand-forecasting models.

SOFTWARE

Python package	calibrate-shift : a library for calibrated uncertainty estimation under distribution shift https://github.com/aliciaren/calibrate-shift
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TECHNICAL STRENGTHS

Languages	Python, C++, R
Libraries & Tools	PyTorch, JAX, scikit-learn

HONORS AND AWARDS

2020	Vector Institute Postgraduate Affiliate Award stipend and compute grant for dissertation research (total \$20,000)
2016 – 2020	NSERC Postgraduate Scholarship

PROFESSIONAL SERVICE

2022	Reviewer , <i>NeurIPS</i>
2021	Reviewer , <i>ICML</i>

TEACHING EXPERIENCE

University of Toronto Teaching Assistant

2019 Introduction to Machine Learning

2018 Probability and Statistics for Computer Scientists