

# Curtis Fox

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INFORMATION   Google Scholar: [\[Link\]](#)  
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EDUCATION      **University of British Columbia**  
Doctor of Philosophy (PhD) in Computer Science *2023 - Present*

- Research Area: Machine Learning
- Supervisor: Mark Schmidt

  
Master of Science (MSc) in Computer Science *2021 - 2023*

- Research Area: Machine Learning
- Supervisor: Mark Schmidt
- Thesis: A Study of the Edge of Stability in Deep Learning

  
Bachelor of Science (BSc) *2014 - 2019*

- Major: Combined Honours in Computer Science and Statistics

PAPERS

1. A. Abaskohi, T. Chen, M. Muñoz-Mármol, **C. Fox**, A. V. Ramesh, É. Marcotte, X. H. Lù, N. Chapados, S. Gella, C. Pal, A. Drouin, I. H. Laradji. “DRBench: A Realistic Benchmark for Enterprise Deep Research”. *ICLR*, 2026 [\[Link\]](#)
2. L. Madden, **C. Fox**, C. Thrampoulidis. “Next-token Prediction Capacity: General Upper Bounds and a Lower Bound for Transformers”. *IEEE Transactions on Information Theory*, 2025 [\[Link\]](#)
3. **C. Fox**, A. Mishkin, S. Vaswani, M. Schmidt. “Glocal Smoothness: Line Search can really help!”. *arXiv preprint arXiv:2506.12648*, 2025 [\[Link\]](#)[\[NeurIPS OPT Workshop version\]](#)
4. **C. Fox\***, L. Galli\*, M. Schmidt, H. Rauhut. “Nonmonotone Line Searches Operate at the Edge of Stability”. *NeurIPS OPT Workshop*, 2024 [\[Link\]](#)
5. **C. Fox**. “A Study of the Edge of Stability in Deep Learning”. *Master’s Thesis*, 2023 [\[Link\]](#)
6. A. Maslova, R. N. Ramirez, K. Ma, H. Schmutz, C. Wang, **C. Fox**, B. Ng, C. Benoist, S. Mostafavi, Immunological Genome Project. “Deep Learning of Immune Cell Differentiation”. *Proceedings of the National Academy of Sciences of the United States of America*, 2020 [\[Link\]](#)
7. **C. Fox**; Supervisors: Y. Sun, M. P. Friedlander. “Truncated Interior Point Method for LP-Boost”. *Technical Report*, 2018 [\[Link\]](#)

\*Equal Contribution

INDUSTRY      **Research Intern**  
RESEARCH      ServiceNow AI Research *June 2025 - Oct 2025*  
EXPERIENCE      

- Co-developed DRBench, a benchmark for evaluating AI agents on complex, open-ended deep research questions in enterprise settings. Unlike previous benchmarks that focus on simple queries, DRBench evaluates agents on more complicated, multi-step queries. (paper [1])

ACADEMIC  
RESEARCH  
EXPERIENCE

**Graduate Research Assistant**

University of British Columbia - Computer Science

*Sept 2021 - Present*

- Designed and implemented experiments to measure the next-token prediction capacity limits of transformer models, supplementing derived theoretical bounds. (paper [2])
- Introduced “glocal” smoothness, a theoretical framework combining local and global smoothness assumptions. Proved for different algorithms and step size selection methods that it leads to improved convergence results while providing a possible explanation for the gap between the step sizes that work in theory versus in practice. (paper [3])
- Demonstrated that nonmonotone line-search optimization methods operate at the Edge of Stability while yielding large step sizes during neural network training, unlike their monotone counterparts. (paper [4])
- Authored master’s thesis on the Edge of Stability phenomenon in deep learning. (paper [5])

**NSERC Undergraduate Research Assistant**

University of British Columbia - Statistics

*May 2019 - Aug 2019*

- Used convolutional neural networks to identify biologically significant base-pair sequences in genomic data. (paper [6])

**NSERC Undergraduate Research Assistant**

University of British Columbia - Computer Science

*May 2018 - Aug 2018*

- Investigated boosting algorithms, summarized in a technical report. (paper [7])

SOFTWARE  
EXPERIENCE

**Software Developer**

Synic Software

*2020 - 2021*

TEACHING  
EXPERIENCE

**Teaching Assistant**

University of British Columbia - Graduate TA

*2021 - 2024*

University of British Columbia - Undergraduate TA

*2015 - 2019*

I have worked as a TA for the following courses:

1. CPSC 110 - Computation, Programs, and Programming
2. CPSC 213 - Introduction to Computer Systems
3. CPSC 221 - Basic Algorithms and Data Structures
4. CPSC 302 - Numerical Computation for Algebraic Problems
5. CPSC 340 - Machine Learning and Data Mining
6. CPSC 406 - Computational Optimization
7. CPSC 421 - Introduction to Theory of Computing
8. STAT 200 - Elementary Statistics for Applications
9. STAT 302 - Introduction to Probability

SELECTED  
SKILLS

**Programming Languages:** Python, MATLAB, Java, Bash

**Packages/Tools:** PyTorch, NumPy, Pandas, Matplotlib, Weights and Biases