

# Curtis Fox

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CONTACT INFORMATION	Email: curtfox@student.ubc.ca Google Scholar: <a href="#">[Link]</a> Website: <a href="#">[Link]</a> LinkedIn: <a href="#">[Link]</a>	
EDUCATION	<b>University of British Columbia</b> Doctor of Philosophy (PhD) in Computer Science <ul style="list-style-type: none"><li>• Research Area: Machine Learning</li><li>• Supervisor: Mark Schmidt</li></ul>	2023 - Present
	Master of Science (MSc) in Computer Science <ul style="list-style-type: none"><li>• Research Area: Machine Learning</li><li>• Supervisor: Mark Schmidt</li><li>• Thesis: A Study of the Edge of Stability in Deep Learning</li></ul>	2021 - 2023
	Bachelor of Science (BSc) <ul style="list-style-type: none"><li>• Major: Combined Honours in Computer Science and Statistics</li></ul>	2014 - 2019
PAPERS	<ol style="list-style-type: none"><li>1. A. Abaskohi, T. Chen, M. Muñoz-Mármol, <b>C. Fox</b>, 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”. <i>ICLR</i>, 2026 <a href="#">[Link]</a></li><li>2. L. Madden, <b>C. Fox</b>, C. Thrampoulidis. “Next-token Prediction Capacity: General Upper Bounds and a Lower Bound for Transformers”. <i>IEEE Transactions on Information Theory</i>, 2025 <a href="#">[Link]</a></li><li>3. <b>C. Fox</b>, A. Mishkin, S. Vaswani, M. Schmidt. “Glocal Smoothness: Line Search can really help!”. <i>arXiv preprint arXiv:2506.12648</i>, 2025 <a href="#">[Link]</a> [<a href="#">NeurIPS OPT Workshop version</a>]</li><li>4. <b>C. Fox*</b>, L. Galli*, M. Schmidt, H. Rauhut. “Nonmonotone Line Searches Operate at the Edge of Stability”. <i>NeurIPS OPT Workshop</i>, 2024 <a href="#">[Link]</a></li><li>5. <b>C. Fox</b>. “A Study of the Edge of Stability in Deep Learning”. <i>Master’s Thesis</i>, 2023 <a href="#">[Link]</a></li><li>6. A. Maslova, R. N. Ramirez, K. Ma, H. Schmutz, C. Wang, <b>C. Fox</b>, B. Ng, C. Benoist, S. Mostafavi, Immunological Genome Project. “Deep Learning of Immune Cell Differentiation”. <i>Proceedings of the National Academy of Sciences of the United States of America</i>, 2020 <a href="#">[Link]</a></li><li>7. <b>C. Fox</b>; Supervisors: Y. Sun, M. P. Friedlander. “Truncated Interior Point Method for LP-Boost”. <i>Technical Report</i>, 2018 <a href="#">[Link]</a></li></ol>	

\*Equal Contribution

INDUSTRY RESEARCH EXPERIENCE	<b>Research Intern</b> ServiceNow AI Research <ul style="list-style-type: none"><li>• 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])</li></ul>	June 2025 - Oct 2025
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<b>ACADEMIC RESEARCH EXPERIENCE</b>	<p><b>Graduate Research Assistant</b> University of British Columbia - Computer Science</p> <ul style="list-style-type: none"> <li>Designed and implemented experiments to measure the next-token prediction capacity limits of transformer models, supplementing derived theoretical bounds. (paper [2])</li> <li>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])</li> <li>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])</li> <li>Authored master’s thesis on the Edge of Stability phenomenon in deep learning. (paper [5])</li> </ul> <p><b>NSERC Undergraduate Research Assistant</b> University of British Columbia - Statistics</p> <ul style="list-style-type: none"> <li>Used convolutional neural networks to identify biologically significant base-pair sequences in genomic data. (paper [6])</li> </ul> <p><b>NSERC Undergraduate Research Assistant</b> University of British Columbia - Computer Science</p> <ul style="list-style-type: none"> <li>Investigated boosting algorithms, summarized in a technical report. (paper [7])</li> </ul>	<i>Sept 2021 - Present</i>
<b>SOFTWARE EXPERIENCE</b>	<p><b>Software Developer</b> Sync Software</p>	<i>2020 - 2021</i>
<b>TEACHING EXPERIENCE</b>	<p><b>Teaching Assistant</b> University of British Columbia - Graduate TA</p> <p>University of British Columbia - Undergraduate TA</p>	<i>2021 - 2024</i> <i>2015 - 2019</i>
<p>I have worked as a TA for the following courses:</p> <ol style="list-style-type: none"> <li>CPSC 110 - Computation, Programs, and Programming</li> <li>CPSC 213 - Introduction to Computer Systems</li> <li>CPSC 221 - Basic Algorithms and Data Structures</li> <li>CPSC 302 - Numerical Computation for Algebraic Problems</li> <li>CPSC 340 - Machine Learning and Data Mining</li> <li>CPSC 406 - Computational Optimization</li> <li>CPSC 421 - Introduction to Theory of Computing</li> <li>STAT 200 - Elementary Statistics for Applications</li> <li>STAT 302 - Introduction to Probability</li> </ol>		
<b>SELECTED SKILLS</b>	<p><b>Programming Languages:</b> Python, MATLAB, Java, Bash</p> <p><b>Packages/Tools:</b> PyTorch, NumPy, Pandas, Matplotlib, Weights and Biases</p>	