

# Furkan Danisman

(437)-329-4956 | [furkandanisman@gmail.com](mailto:furkandanisman@gmail.com) | [G-Scholar](#) | [LinkedIn](#) | [Github](#) | [Medium](#)

## EDUCATION

---

<b>Doctor of Philosophy in Statistics</b> <i>University of Toronto — Co-supervised by Dehan Kong and Zhijing Jin</i>	09/2025 – Toronto, Canada
<b>Bachelor of Science in Statistics</b> <i>York University — First Class With Distinction — GPA: 3.76/4</i>	01/2023 – 05/2024 Toronto, Canada
<b>Bachelor of Arts and Sciences in Statistics</b> <i>Middle East Technical University — Transferred to York University</i>	09/2019 – 01/2023 Ankara, Turkey

## SKILLS

---

• **Python** (Matplotlib, PyTorch, scikit-learn, numpy, pandas) • **R** (tidyverse, ggplot2, dplyr, tidyr) • **PostgreSQL**

## WORK EXPERIENCE

---

<b>Graduate Researcher   Python</b> <i>Vector Institute for Artificial Intelligence</i> <ul style="list-style-type: none"><li>Working on causal inference, RL and LLMs.</li></ul>	09/2025 – Present Toronto, Canada
<b>Teaching Assistant   Python &amp; R &amp; JAVA</b> <i>Statistical Sciences, University of Toronto</i> <ul style="list-style-type: none"><li>Leading tutorials for STA313 (Data Visualization) and STA238 (Statistics and Data Analysis II).</li></ul>	09/2025 – Present Toronto, Canada
<b>Research Assistant   Python &amp; SQL &amp; R</b> <i>Banking and Payment Department, Bank of Canada</i> <ul style="list-style-type: none"><li>Co-authored research paper on Decentralized Finance Lending platforms, analyzing trustless borrowing systems where neither party needs to trust each other. Empirically examined trade-offs, functionality, and risks.</li><li>Built Large Value Payment System simulation integrating LLMs as strategic fund managers in an interactive environment. Evaluated how advanced reasoning capabilities improve system efficiency and identified limitations.</li><li>Provided policy recommendations through empirical analysis of financial access surveys among central banks.</li></ul>	01/2025 – 09/2025 Ottawa, Canada
<b>Research Associate   R</b> <i>York University</i> <ul style="list-style-type: none"><li>Developed DensOLog (Density Estimation via Optimized Log-Concavity), non-parametric algorithm, for analyzing data with frequencies in interval ranges (e.g., "50 people earn \$100k-\$120k")</li><li>DensOLog recovers the underlying density with only a shape-constrained assumption, providing both higher accuracy and robust option.</li><li>Proved new theoretical convergence properties for EM algorithm with log-concave distributions.</li></ul>	05/2024 – 02/2025 Toronto, Canada
<b>Research-Boursier   R</b> <i>The Scientific and Technological Research Council of Turkey</i> <ul style="list-style-type: none"><li>Developed a two-phase bayesian-frequentist statistical model for longitudinal data with ordinal response.</li><li>Using the model, analyzed 5-8 years of mammographic density follow-ups, demonstrated that longitudinal changes in breast density significantly impact cancer risk.</li><li>Published research in Scientific Reports, a multidisciplinary journal by Nature Portfolio.</li></ul>	03/2024 – 10/2024 Ankara, Turkey
<b>Teaching Assistant</b> <i>York University</i> <ul style="list-style-type: none"><li>Graded exams and assignments for Differential Calculus with Applications and Applied Calculus courses.</li></ul>	01/2024 – 05/2024 Toronto, Canada
<b>Intern Data Scientist   R &amp; Excel</b> <i>Rotamopt - (Startup)</i> <ul style="list-style-type: none"><li>Collected transportation data and optimized route trial algorithms to improve operational performance.</li><li>Conducted competitor analysis and market research, presenting strategic recommendations to leadership.</li></ul>	06/2022 – 09/2022 Ankara, Turkey

**Peer-Reviewed Journal Articles**

- [1] Erul, E., Barcia, V., Alkan, A., Akkus, E., **Danisman, F.**, Nixon, I., Eniu, A., & Urun, Y. (2026). *Imposter syndrome, burnout, and maladaptive perfectionism among oncology professionals: A global cross-sectional study*. Accepted in JCO Oncology Practice.
- [2] Erul, E.\*, Avci, A.N., Akkus, E., Ayas, Ö.F., **Danisman, F.B.**, & Utkan, G. (2025). *Assessment of fear of cancer recurrence in patients with colorectal cancer and its association with pet ownership: A cross-sectional study*. *Current Oncology*, 32(11), 592.
- [3] Kulturoglu, M.O., Aydin, F., Sagdic, M.F., Aslan, F., Ofaz, Z., **Danisman, F.B.**, Kalaylioglu, Z., & Dogan, L. (2025). *The impact of changes in breast density over time on breast cancer risk*. *Scientific Reports*, 15, 23900.
- [4] Erul, E., Aktekin, Y., **Danisman, F.B.**, et al. (2025). *Perceptions, attitudes, and concerns on artificial intelligence applications in patients with cancer*. *Cancer Control*, 32, 1–9.
- [5] Acharya, S., Zhang, T.J., Kim, A., Haghighat, A., Xianlin, S., Shrestha, R.B., Mordig, M., **Danisman, F.**, Chiu, J., Qi, Y.C., Schölkopf, B., Sachan, M., & Jin, Z. (2025). *CauSciBench: Assessing LLM causal reasoning for scientific research*. *NeurIPS 2025 Workshop on CauScien: Uncovering Causality in Science*
- [6] **Danisman, F.**, Kilic, S.I., Amini, N., Orcun Ada, O., Aktas, S.G., & Sarul, G. (2023). *METU students' college life satisfaction*. *International Journal of Social Science Research and Review*, 6(7), 12–37.

**Under Review**

- [1] **Danisman, F.\***, Ofaz, Z., & Kalaylioglu, Zeynep. (2026). *Decoupling risk and masking in mammographic density under irregular follow-up using a latent Markov progression–detection framework*. *Statistics in Medicine*.
- [2] **Danisman, F.\***, Desai, A., Jiang, J., Rivadeneyra, F., & Azad, T. (2026). *Strategic Interactions of AI Agents in Payment Systems*. *International Conference on Payments and Securities Settlement*.
- [3] Chiu, J., & **Danisman, F.** (2026). *Borrowing without banks: Returns, leverage, and liquidations in DeFi lending*. *Bank of Canada*.

**Other Peer-Reviewed Contributions**

- [1] **Danisman, F.\***, Jankowski, H., de Souza, C., da Cruz, A., & Rakusin, R. (2025). *Predicting New Onset Atrial Fibrillation: Black-box and Interpretable Models*. Poster presented at the SSC 2025 Annual Meeting Conference (national).
- [2] **Danisman, F.\***, Nguyen, N., Raghuvanshi, A., & Bisnath, S. (2024). *Augmentation of a global navigation satellite system (GNSS)*. Poster presented at STEM Fellowship Conference (national).

**Non-Peer-Reviewed Contributions**

- [1] **Danisman, F.\***, Jankowski, H., & de Souza, C.P.E. (2025). *Dens-OLog: Density estimation with optimized log-concavity*. Presentation at the SSC 2025 Annual Meeting Conference (national).

**Working Papers**

- [1] **Danisman, F.\***, Jankowski, H., & de Souza, C.P.E. (2026). *Dens-OLog: Density estimation with optimized log-concavity*.
- [2] Arif, S., **Danisman, F.\***, Jin, Z. (2026). *Culturally Adjusted Large Language Models*.