Steven Winter

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EDUCATION

PhD in Statistical Science *Sept. 2021 - May 2025 (expected)*
Duke University, Durham, North Carolina, USA

Master's in Statistical Science *Sept. 2019 - May 2021*
Duke University, Durham, North Carolina, USA

Bachelor of Science, Honours Mathematics *Sept. 2014 - May 2019*
University of Alberta, Edmonton, Alberta, Canada.

PROJECTS

Sequential Gibbs Posteriors | (in preparation) *Sept. 2021 - Present*

- Extended likelihood-free Bayesian inference to sequential losses.
- Established concentration and the first Bernstein-von Mises theorem on orientable manifolds.
- Applied method to characterize uncertainty in PCA.

Staf-GATE Autoencoder | arxiv.org/abs/2210.05672 *Sept. 2021 - Oct. 2022*

- Helped develop/validate a variational autoencoder for predicting functional connectomes from structural connectomes.

Tensor-Network PCA | arxiv.org/abs/2010.02332 *Sept. 2019 - Oct. 2020*

- Developed/implemented an extension of PCA for multi-scale brain network data.

EXPERIENCE

Physics

Research Assistant at IceCube *May 2018 - Aug. 2019*

- Developed scalable maximum likelihood methods for neutrino path reconstruction.

Statistics

Research Assistant to Dr. Adam Kashlak *May 2019 - Aug. 2019*

- Developed a generalization of linear regression using estimates of sparse covariance matrices.

Research Assistant to Dr. Keumhee Carriere Chough *May 2019 - Aug. 2019*

- Investigated methods for resolving class imbalances for rare disease data.

Mathematics

NSERC Collaborator with Dr. Vladimir Troitsky *May 2018 - Aug. 2018*

- Disproved conjecture that free Banach lattices are representation lattices of multinormed spaces.

NSERC Collaborator with Dr. Thomas Creutzig *May 2017 - Aug. 2017*

- Classified representations of a vertex operator algebra.

NSERC Collaborator with Dr. Stephan Gille *May 2016 - Aug. 2016*

- Computed representations of the Heisenberg group over finite fields.

AWARDS

Alexander-Graham-Bell Canada Graduate Scholarship (CGS-D) *2023 to 2025*
Duke Statistical Science MS Fellowship *2019 to 2021*
NSERC Undergraduate Student Research Award (3x) *2016, 2017, 2018*

SKILLS AND RESEARCH INTERESTS

Languages Python, R, MATLAB.
Interests Nonparametrics, networks, statistical computing, connectomics, cancer genomics.