


ALISTAIR PATTISON

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Education

Bachelors of Arts, Mathematics & Statistics, Carleton College (September 2020 – June 2024)

- 3.99 GPA, captain of varsity track and field, minor in Digital Arts and Humanities.
- Studied abroad at the University of Cambridge taking classes in computer science and history.

Work Experience

Statistical Consultant, Minnesota Department of Human Services (September 2023 – present)

- Consult for Age-Friendly Minnesota, a collaboration between several government and private entities with the goal of making the state more accessible to and inclusive of older Minnesotans.
- Analyze a large survey data set to identify disparities in wealth, housing, and internet access among elderly Minnesotans.
- Create data visualizations and give bi-weekly reports to a group of government employees and other consultants.

Research Assistant, University of Minnesota (September 2022 – present)

- Developed a method for reporting abuse on encrypted messaging platforms that provably maintains privacy until certain thresholds are met, e.g., if a user is reported enough times or by enough people.
- Wrote and benchmarked a proof-of-concept implementation in Rust.
- Presented findings at a first-tier security conference. We plan to publish more results in 2024.

Teaching Assistant, Carleton College (March 2021 – present)

- Tutor students, grade homework, and hold office hours for classes in the math and computer science departments.
- Classes include algorithms, real analysis, abstract algebra, data visualization, artificial intelligence, and calculus.

The Food Guy, YMCA Camp Widjiwagan (June – September 2021)

- Oversaw the purchase and distribution of food for nearly 200 wilderness trips across the US and Canada.
- Managed a \$95,000 budget alongside two other employees and taught basic nutrition to kids aged 12 to 18.
- Lead a week-long canoeing trip with BOLD, a program dedicated to making the outdoors more diverse and accessible.

Dining Hall Worker, Carleton College (September 2020 – March 2021)

Publications

Alistair Pattison and Nicholas Hopper. “Committee Moderation on Encrypted Messaging Platforms”. In: *44th IEEE Symposium on Security and Privacy*. Peer-reviewed poster. May 2023. URL: <https://arxiv.org/abs/2306.01241>

Alistair Pattison and Nicholas Hopper. *Threshold Content Reporting for Encrypted Messages*. Submitting to PETS 2024.

Awards

Phi Beta Kappa, 2023



Dean’s List, 2023, 2022, 2021

James F. Koehler Scholarship, 2022

National Merit Scholarship, 2020



Projects

Ole or Carl?

 [alipatti/oleorcarl](#) 



- This project tests the validity of a long-standing stereotype that students from Northfield's two colleges look meaningfully different. If so, then a machine learning model should be able to tell them apart? Right?
- Uses an SVM classifier on embeddings of student's faces taken from directory photos.

Carleton Course Classifier

 [alipatti/course-classifier](#) 



- A Tensorflow language model that predicts a course's department and number given its description.
- Achieves 64% accuracy in a 54-class problem using a neural net and the Stanford GloVe embeddings.

Wordle Bot

 [alipatti/wordle-bot](#) 

- A NumPy implementation, of 3Blue1Brown's information-theoretic Wordle bot, with a few performance improvements.

In Passing

 [alipatti/in-passing](#) 

- A visualization of passing and touch data from the 2022 FIFA Men's World Cup, built with d3.js.

Skills

Programming: Python, R, JavaScript, L^AT_EX, Rust, Java, SQL, git, Docker.

Web Development: React, Typescript, Next.js, Prisma.

Data Science: NumPy, dplyr, pandas, Matplotlib, ggplot2, tidyverse, SQL.

Machine Learning: TensorFlow, vector embeddings, SVMs, scikit-learn.

Data Visualization: ggplot2, matplotlib, d3.js.