

ALISTAIR PATTISON

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Education

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


- 3.99 GPA, Dean's List, National Merit Scholarship, public policy minor, digital arts and humanities minor.
- Studied abroad at the University of Cambridge taking classes in cryptography, WWII history, and the history of computing.
- Member of varsity cross-country and track & field. Three-time conference finalist, all-conference honorable mention.

Work Experience

Teaching Assistant, Carleton College (March 2021 – present)

- Tutor students and hold office hours for classes in the math and computer science departments.
- Collaborate with the professor to establish clear grading guidelines, write code tests, and grade homework.
- Classes include Data Visualization (CS 314), Artificial Intelligence (CS 321), Algorithms (CS 252), Math Structures (MATH 236), and Calculus II (MATH 120).

Research Assistant, University of Minnesota (September 2022 – August 2023)

- Developed a cryptographic protocol in which the sender of an encrypted message can be verified if there is sufficient agreement among a group of moderators. The protocol retains all security properties for messages that aren't reported.
- Implemented the protocol using Rust and Docker to estimate the cost of widespread adoption.
- Presented at the 2023 IEEE Symposium on Security and Privacy (poster .



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

- Personally managed the purchase and distribution of food for nearly 200 wilderness trips across the US and Canada.
- Oversaw a \$95,000 budget in collaboration with two other employees.
- Lead a week-long canoeing trip with Boys Outdoor Leadership Development, a program dedicated to making the outdoors more diverse and financially accessible.

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

Farm Hand, Hansen Christmas Tree Farm (November 2018 – December 2021)

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 they are, then a machine learning model should be able to tell them apart? Right?
- Uses a SVM classifier on state-of-the-art vector embeddings of student's directory photos.

Carleton Course Classifier  [alipatti/course-classifier](#) 

- A Tensorflow natural-language model that predicts the department and course number of a course given its description.
- Achieves 64% accuracy in a 54-class classification problem using a CNN and deep word embeddings.

Skills

Programming: Python (numpy, pandas, tensorflow, sklearn, matplotlib), R (tidyverse, ggplot2), JavaScript (TypeScript, React, Next.js, d3.js), L^AT_EX, Rust, Java, SQL, git, Docker.