Zoey Drassinower

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Zoey Drassinower (they/she) is a recent university graduate with B.Sc. in Computing, Math and Analytics. Completed multiple research contracts in graduate-level labs conducting novel research. Seeking to leverage strong analytical and communications skills in project-based professional environments.

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*Go to my website **zoeyzwee.github.io** for full project write-ups, interactive demos, and more.*

Education

Bachelors in Computing (Honours) w/ Specialization in Computing and Mathematics from Queen's University

Academic Work Experience

Research Contracts

May 2023 – May 2024 **Summer Research/Undergraduate Final Project (High Dimensional Feature Selection), *Queen's University***

Applying statistical methods to identify key molecules in fungi and hot sauce.
Supervised by Prof. Randy Ellis, funded by NSERC USRA grant.

- Reviewed current literature to select algorithms from relevant academic papers
- Implemented and applied algorithms to very high dimensional data
- Visualized and presented results to peers and supervisors

May 2022 – Aug 2022 **Summer Research (Soccer Analytics), *Queen's University***

Modelling successful offensive progressions in soccer using player tracking data.
Supervised by Prof. Catherine Pfaff.

- Improved transformation algorithms, resulting in 20x faster code execution
- Migrated workflow to run in Docker containers

Teaching Assistant Contracts

Winter 2024 ***(TA)*** **Artificial Intelligence (300-level), *Queen's University***

Introduction to AI topics, such as Bayesian reasoning, automated planning and neural networks.
Course taught by Prof. Christian Muise.

- Standard TA responsibilities (grading, office hours, etc.)
- Identified and corrected bugs in auto-grader scripts
- Updated assignment code to be compatible with modern python versions

Fall 2023 ***(Head TA)*** **Programming Paradigms (300-level) *Queen's University***

Introduction to functional and declarative programming languages (Haskell, Prolog).
Course taught by Prof. Jana Dunfield.

- Standard TA responsibilities (grading, office hours, etc.)
- Allocated and managed responsibilities of other TAs
- Wrote and recorded videos teaching course materials

Fall 2022 Winter 2023 ***(TA)*** **Programming Paradigms (300-level) *Queen's University***

Introduction to AI topics, such as Bayesian reasoning, automated planning and neural networks.
Course taught by Prof. Christian Muise.

- Standard TA responsibilities (grading, office hours, etc.)
- Taught exam prep tutorials, created review resources

Teaching and Mentoring Experience

Jan 2024 – Apr 2024 **Introductory Programming Lessons**

- Taught weekly 1-on-1 programming lessons (in person) to a 1st year math student with no prior coding experience
- Designed a personalized lesson plan, tailored to meet the goals of the student
- Supplemented lessons with "workplace computing skills" such as debugging, documentation, style, and Git

Jun 2019 – Apr 2024 **Various Math and Physics Tutoring**

- Tutored students taking 1st and 2nd year math and physics courses

Grants and Awards

May 2023 **Undergraduate Summer Research Award** *(Natural Sciences and Engineering Research Council of Canada)* - **$9800**

- Awarded each year to ~3000 Canadian STEM undergraduates conducting novel research over the summer

Jan 2024 **Dean's Award of Excellence** *(Queen's University)*

- Awarded to undergraduates with GPA in the top 0.5% of GPAs in the Faculty of Arts and Sciences at Queen's

Independent Projects

Project write-ups and demos can be found at my website ***zoeyzwee.github.io****.*

Py2048-ML v2 (Python)

- Re-creating the 2048 agent described in the Stochastic MuZero paper by Deep Mind
- Applies multiple state of the art techniques in deep reinforcement learning, such as reward scaling, prioritized replay buffers, Monte-Carlo tree search, residual networks, layer-normalization
- Neural networks built using TensorFlow

Zoelver (Python/Rust)

- A classical planner, prototyped in Python and built in Rust, implementing a variety of classical planning strategies

Baseball Tracking Dashboard (Python)

- A custom data dashboard for analyzing batter tendencies
- Built and hosted via Streamlit
- Created as part of the 2024 Women in Sports Data Hackathon

Other Interests

Songwriting and Performance

- 15 years of vocal training at ProVoce Studios and Free Your Voice coaching
- Participated in Artist Development/Songwriter workshops at Lawson Vocal Studios
- Played hired performances at on-campus events throughout university
- Self-produced and recorded original song: Run Down

Competitive Ultimate Frisbee

- 1 season of varsity at Queen's University (2023-2024)
- 1 season of competitive tournaments w/ Toronto Remix (2024)