

# Dominick Robinson

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## EDUCATION

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### Carnegie Mellon University

*Master of Science in Applied Data Science (MADS)*

**Expected May 2026**

*Pittsburgh, PA*

#### Rales Fellow

*Highly selective STEM leadership program focused on mentorship, professional development, and industry engagement.*

**Relevant coursework:** Linear Models, Generative AI, Statistical Computing, Data Visualization, Data Engineering & Distributed Environments, Software for Large-Scale Data, Computational Methods for Statistics, Time Series, Statistical Machine Learning

### Carnegie Mellon University

*Bachelor of Science in Mathematical Sciences (Statistics), Minor in Creative Writing*

**May 2025**

*Pittsburgh, PA*

3.85/4.00 GPA

**Relevant coursework:** Advanced Data Analysis, Machine Learning, Statistical Inference II, Probability, Probability Models, Text Analysis, Parallel and Sequential Data Structures and Algorithms, Software Construction, Software Engineering for Startups, Operations Research I & II, Numerical Methods

## SKILLS

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**Languages:** Python, Java, JavaScript/TypeScript, R, SQL, C

**Frameworks & Libraries:** Pandas, Spark, PyTorch, Dash, Plotly, Streamlit, REST APIs, React

**Tools:** Git/GitHub, Tableau, PostgreSQL, VSCode, LaTeX, Databricks, Azure, Godot

## WORK EXPERIENCE

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### RedZone Robotics

*Software Engineering Intern*

**July 2024 - Aug 2025**

- Built Python/OpenCV pipeline to digitize and filter laser imagery for camera calibration
- Designed custom optimization objectives and algorithms for autonomous fisheye camera parameter estimation

### Mathematical Sciences Department, CMU

*Teaching Assistant for Multivariate Analysis*

**Aug 2023 - May 2024**

- Led recitations for 30 students, hosted office hours, and developed course materials using LaTeX

## TECHNICAL PROJECTS

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### CMU Corporate Capstone for United States Tennis Association (USTA)

**Jan 2026 - Present**

- Engineered automated ETL pipelines to scrape and clean 4M+ player, tournament, and match data points
- Built interactive Tableau dashboard to meet stakeholder needs, visualizing trends and predictive model insights

### AI Research Project (Supervised by Prof. Cosma Shalizi)

**Jan 2026 - Present**

- Research on sequential probability assignment for stochastic text generation
- Training on HPC cluster using the DOLMA corpus (3-trillion-token dataset)

### Applied Linear Models Final Project: HIV Treatment Report

**Nov 2025 - Dec 2025**

- Analyzed clinical trial data using linear models to evaluate HIV therapy effectiveness
- Found baseline CD4 count and prior therapy duration predict short-term response

### Data Engineering Final Project: Automated Data Pipeline and Dashboard

**Nov 2025 - Dec 2025**

- Designed PostgreSQL schema and ETL pipeline for large education datasets (College Scorecard, IPEDS)
- Built interactive dashboard for data querying and visualization

### Statistical Principles of Generative AI Final Project

**Nov 2025**

- Generated cop-win graph dataset and applied GraphRNN to synthesize graphs,
- Collected and analyzed model performance data to assess accuracy

**Applied Linear Models Midterm Project: Rail Trails Report** **Oct 2025**

- Investigated impact of proximity to rail trails on home values, finding no significant effect

**Data Visualization Final Project: Dominance of the Big 3/4 in Men's Tennis** **Oct 2025**

- Cleaned and analyzed ATP Tennis data in R to visualize Big 3/4 dominance in men's professional tennis

**Software Construction Final Project: Santorini** **April 2025**

- Designed and built a full-stack web implementation of Santorini using Java backend and React frontend
- Implemented RESTful APIs to manage game state, enforce rules, validate moves, and synchronize UI updates

**Text Analysis Final Project: Exploring Linguistic Differences Across Generations** **Nov 2024 - Dec 2024**

- Scraped, cleaned, and tokenized thousands of Reddit comments in Python to build a generational dataset
- Analyzed Gen Alpha, Gen Z, and Millennial text, uncovering shifts in slang, sentiment, and topic use

**Operations Research II Final Project: Feeding CMU Orientation** **Oct 2024 - Dec 2024**

- Scraped and cleaned nutritional information and prices of Trader Joe's and Whole Foods products using Python
- Mapped products to ingredients in recipes database using Fuzzy library
- Solved integer program to minimize cost of feeding 900 CMU first-years with dietary and nutritional constraints

**Graph Theory Research (Supervised by Prof. David Offner)** **May 2023 - Dec 2023**

- Developed mathematical tool based on the graph theory game of "cops and robbers"
- Designed graph editor, JSON converter/parser, and computer opponents with optimal strategies

## **LEADERSHIP**

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**CMU Pickleball Club, President/Founder** **Dec 2022 - Dec 2024**

- Founded and grew club to 500+ members in 4 semesters, and developed club website (cmupickleball.net)

**Game Creation Society, President & Team Lead** **Dec 2022 - Dec 2023**

- Communicated and planned talks with industry speakers and won **GCS Gold Award** for excellence