

# Massimo Caruso

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## Education

Montreal, Canada	Concordia University	Jan 2023 – Present
• Major: Software Engineering, BEng		

## Experience

CTF Challenge Designer, Hackathon (www.athackctf.com): Capture the flag based hackathon.	AtHackCTF	Nov 2024 – Present
• Explanation of task/achievement 1		
• Explanation of task/achievement 2		
• Explanation of task/achievement 3		

## Projects

### School Web Application

- 1
- 2
- 3
- 4
- 5

### Linear Regression Model

- Developed a multiple linear regression model to analyze factors influencing life expectancy using WHO data from 193 countries (2000–2015).
- Cleaned and preprocessed data by managing missing values, removing outliers, and converting categorical variables into quantitative data using Python.
- Applied backward elimination to reduce predictors from 20 to 6, addressing multicollinearity and improving model accuracy (adjusted  $R^2 = 0.771$ ).
- Used Python (Pandas, NumPy, Scikit-learn) for analysis, hypothesis testing, and modeling; visualized correlations using heatmaps and scatter plots.
- Predicted 2013 Canada life expectancy within 0.5 years of WHO's reported value, demonstrating model reliability and efficiency.

## Skills

**Languages:** (Proficient): Java, HTML/CSS, Javascript, Python, SQL; (Familiar): C, C++, Erlang

**Frameworks:** React, Node.js, Flask

**Libraries:** Pandas, NumPy, Matplotlib, Scikit-learn

**Developer Tools:** Git, MongoDB, PostgreSQL, Neo4j, VS Code, Eclipse, Jupyter Notebook

**Relevant Courses:** Data Structures and Algorithms, Operating Systems, System Hardware, OOP, Databases