

# Zachary Djerdjouri

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## EDUCATION

### University of Ottawa

B.S. in Computer Science and Mathematics

Ottawa, ON

Expected Graduation, Dec. 2027

- **CGPA:** 9.9/10.0
- **Relevant Coursework:** Computing in Python and Java, Databases, Computer Architecture, Data Structures and Algorithms

## EXPERIENCE

### National Institute of Scientific Research (INRS)

Research Software Engineer Intern

Québec, QC

May 2024 – Present

- Worked on image processing with Python's OpenCV for permafrost erosion experiments and other research projects.
- Redeveloping data acquisition system using LabView and Python for the Environmental Hydraulic Laboratory (LHE).
- Created a dashboard utilizing Python's Dash, Plotly, Pandas and NumPy modules to compute wave equations, plot wave signals and generate binary files for use in wave flumes.
- Recipient of NSERC's Undergraduate Research Award

## PERSONAL PROJECTS

### AI Web Scraper Application

[Project GitHub](#)

*Python, Selenium, BeautifulSoup, Streamlit, Ollama 3.1, LangChain*

- Utilized BeautifulSoup, lxml, and html5lib to clean and structure raw HTML data efficiently.
- Integrated Ollama 3.1 model via langchain\_ollama for advanced AI-driven data parsing and analysis.
- Built a user-friendly interface with Streamlit for easy interaction and real-time data visualization.

### Movie Recommendation Search Engine

[Project GitHub](#)

*Python, NumPy, Pandas, Sklearn, Jupyter Notebooks*

- Cleaning data set of over 160,000 users with Python Pandas and NumPy
- Implemented an algorithm to recommend movies based on similar user interests, leveraging the over 25,000,000 ratings in the data set.

### Social Media Web Application

[Website](#)

*Python, Flask, HTML, CSS, SQL Lite*

- Developed a social media web application using Python and Flask, resembling Twitter.
- Key features include account creation, log in, log out, likes, and comments, with data securely stored in a backend database and shared among logged-in users.

### Portfolio Website

[Website](#)

*Python, JavaScript, Django, HTML, CSS, SQL Lite*

## SKILLS

- **Programming:** Python, JavaScript, Java, HTML, CSS, SQL Lite, C, Flask, Python Pandas, NumPy, Matplotlib, Plotly, Dash, Django, Streamlit, Selenium, BeautifulSoup, langchain, Spring Boot, React.
- **Tools:** Visual Studio Code, IntelliJ, PyCharm, VS Code, Jupyter Notebooks, Git, Bootstrap, GitHub, GitLab, LaTeX.
- **Communication:** Fluent in French and English, Microsoft Suite, Word, Outlook, Microsoft Excel, PowerPoint.
- **Mathematical and Logical Reasoning:** Distinctions at Fermat Mathematics Competition of the University of Waterloo.

## LEADERSHIP ROLES/EXTRACURRICULARS

### Computer Science Student Association

Vice-President of Communications

University of Ottawa, Ottawa, ON

Oct 2023 – May 2024

- Crafted monthly newsletters in French and English for over 1,100 students using HTML and CSS.

- Organized Frost Week activities led fundraising campaigns, and managed social media accounts.

**UOrover Rover Team**

**University of Ottawa, Ottawa, ON**

*Team Member (Guidance, Navigation and Control sub-team)*

*Nov 2023 – Present*

- Refactored GPS node code to be more modular using ROS2 and Python on Ubuntu Virtual Machine.
- Tested GPS code for migration towards a new version of ROS, contributing to automation of the rover's driving.

**Computer Science Student Association**

**University of Ottawa, Ottawa, ON**

*Frosh Week Guide*

*Aug 2024 – Sept 2024*

- Facilitated the integration of first-year students by organizing and leading orientation activities.
- Coordinated icebreaker events and campus tours to help new students familiarize themselves with the university environment.