

# Mirza Ahmadi

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## EDUCATION

### University of Guelph

*M.Sc., Bioinformatics and Artificial Intelligence – Research-Based*

Jan 2024 - Present

Guelph, ON

*B.Sc. (Hons), Zoology Major with Minor in French Studies (3.7/4.0 GPA)*

Sep 2019 – April 2023

- Completed a one-semester study abroad program at Aberystwyth University, Wales

## SKILLS AND CERTIFICATIONS

- Programming Languages:** Python, R, HTML, CSS
- Relevant Libraries:** Pandas, NumPy, Scikit-learn, TensorFlow, NLTK, Matplotlib
- Specialized Skills:** Machine Learning (ML), Deep Learning (DL), Genomics, Data Analysis, Scientific Communication
- Certifications:** [Compute Ontario Summer School 2024: ML, DL, DNA/RNA Sequencing](#) | [Harvard's CS50 Intro to AI with Python](#) | [E-Learning Course: Data Structures](#) | [Harvard's CS50 Intro to Programming with Python](#)

## RESEARCH EXPERIENCE

### University of Guelph

*M.Sc. Research Project*

Jan 2024 - Present

Guelph, ON

- Developing a pipeline to extract, present and categorize genomic transposable element (TE) sequence data by family
- Integrating **Python**, **bioinformatics tools**, **ML** and **DL** for data processing, TE classification, and model development
- Presenting the output TE classifications in **Excel** for easy analysis and further use in genome sequencing efforts

### University of Guelph

*Evolutionary Biology Researcher*

May 2022 – Present

Guelph, ON

- Designed and executed an independent research report on snake venom evolution across 127 species and three families
- Analysed proteomics and phylogenetic data using **Excel** and **R**, compiling phylogenies and creating graphical analyses
- Authoring a research paper for publication to add to the current understanding of venom and complex trait evolution

## ADDITIONAL WORK EXPERIENCE

### Mitacs

*Globalink Mentor*

April 2022 – Nov 2022

Guelph, ON

- Developed info packages on government regulations and Canadian banking for seven international research interns
- Coordinated two full-day social events and five campus/city tours to foster intern networking and community-building
- Provided ongoing logistical support and addressed individual needs to ensure a safe and enjoyable stay for the interns

### MSH International

*Data Entry Clerk*

May 2021 – Jan 2022

Toronto, ON

- Analysed and uploaded invoice data into the company database, consistently meeting the daily quota of 60 reports
- Managed administrative duties including communicating with clients and providers via email

## RELEVANT PROJECTS

### [Road Sign Categorizer](#) | *Python*

May 2024

- Created a **DL** classifier to categorize road signs into one of 43 categories using the GTSRB dataset of 50 000+ images
- Implemented a convolutional neural network with pooling layers, achieving a classification accuracy exceeding 90%
- Leveraged the Python libraries **TensorFlow**, **Scikit-learn** and **OS** for model building and data preprocessing

### [Venom Type Classifier](#) | [Video Demo](#) | *Python*

March 2024

- Developed a **ML** classifier to predict venom types in snake species based on the proportions of 14 venom proteins
- Achieved 94% classification accuracy when given novel snake species and protein data
- Utilized **Scikit-learn**, **Matplotlib** and **Pandas** to build a support vector machine classifier and visualize PCA data

### [SciRef](#) | [Video Demo](#) | *Python, Tailwind CSS, React, Flask, HTML, CSS*

Aug 2023

- Constructed a website which generates customized scientific references for PubMed journal articles
- Enables users to input URLs and order reference components to obtain accurately formatted references

## INTERESTS & HOBBIES

- Weightlifting, Spikeball, Catan, Audiobooks, Camping, Herbal Tea, Traveling