

# Nhut Hung Nhan

Ottawa, Ontario

☎ 343-297-6643 • ✉ howlnhan2003@gmail.com • 🌐 nhannhuthung.github.io  
in howlnhan • 🐙 nhannhuthung

## Summary

A motivated Mathematics student with background/experience in computational math, numerical computing, programming and scientific research.

## Skills

### Programming:

- Python, Java, SQL, C, C++.
- MATLAB, R, Maple, Sage, CGSuite, LaTeX.
- HTML, CSS, JavaScript.
- Excel, VBA, Macros.

**Libraries:** NumPy, Matplotlib, JAX, Scikit-learn, Pandas, PyTorch, MPI.

**Tools:** Git, CLI.

**Math & CS:** Numerical Linear Algebra; Machine Learning; Design and Analysis of Algorithms; Abstract Data Types and Algorithms; Post-Quantum Cryptography; Wavelets Digital Signal Processing; Computable Functions.

## Projects

- Experimented with multiple regression models (Linear Regression, KNN, Decision Trees, Random Forest, SVR, Gradient Boosting) using Scikit-learn to predict. Evaluated performance using MAE, MSE,  $R^2$ -score and MAPE.
- Implemented a neural network with NumPy to recognize handwritten digits (MNIST dataset) using tanh, softmax and gradient descent.
- Analyzed token growth and hallucination risks in LLMs using Python and DeepInfra API.
- Built VBA macros to automate complex workflows with conditional branching.
- Implemented MPI-based Finite Difference Schemes in C++ and visualized outputs in MATLAB.
- Developed and maintained a website for the CU Math & Stat Society using HTML, CSS, JavaScript.

## Experience

**Teaching Assistant**, Carleton University, Ottawa

Aug 2023 - Current

- Course Subjects: Differential Equations, Mathematical Methods, Mathematical Reasoning, Calculus, and Linear Algebra.
- Hosting problem sessions up to 50 students and grading their assignments weekly.
- Proctoring and marking tests, final exams.

**Research Assistant**, Carleton University, Ottawa

May 2024 - Sep 2024

- Utilized Physics-Informed Neural Networks (PINNs) with JAX in Python.
- Demonstrated numerical experiments using MATLAB.
- Enhanced code efficiency for improved computational accuracy and complexity.
- Reviewed and revised research papers.

## Education

**Carleton University**

Sep 2021 - Apr 2025

*Bachelor of Mathematics Honours: Concentration in Applied Analysis.*

- CGPA: 11.35 → GPA: 3.9 → 94.6%.

**Glebe Collegiate Institute**

Sep 2019 - June 2021

## Publications

Emmanuel Lorin and **Howl Nhan**. Data-driven fractional algebraic system solver. *Mathematics and Computers in Simulation*. 236:170–182, 2025.

## Awards

- Math and Stats TA Excellence Award 2024 - 2025.
- E.W.R. Steacie Scholarship 2024 - 2025.
- Carleton University - Dean's Honour List 2021-2024.
- Lester B. Pearson Scholarship 2023 - 2024.
- Harry S. Southam Scholarship 2022 - 2023.
- President's Scholarship 2021 - 2022.
- Award of Excellence for International Students 2021 - 2022.

## Languages

- Fluent in English.
- Native in Vietnamese.