Anna Tam Ngoc Ly

Email: annatn.ly@mail.utoronto.ca | Phone number: (437) 937-1747
Website: https://atn-ly.github.io/

Highlights of Skills & Qualifications

• **Passion for Mathematical Biology and Disease Modeling**: Dedicated to advancing knowledge in mathematical biology, with a strong interest in modeling infectious disease dynamics and applying quantitative methods to address public health challenges.
• **Quantitative and Analytical Skills**: Strong foundation in mathematics, quantitative biology and statistics. Demonstrated proficiency in complex mathematical and statistical concepts through coursework in calculus, linear algebra, differential equations and probability.
• **Research and Modeling Expertise**: Experienced in developing mathematical models for public health applications, including infectious disease outbreak scenarios. Conducted research in ecological modeling, focusing on adaptation and environmental dynamics using differential equations.

Education

Honours Bachelor of Science (HBSc), University of Toronto (September 2020 – June 2025)
Double Major in Mathematics & Quantitative Biology, Minor in Statistics
• Cumulative GPA: 3.77/4.00
• Relevant Courses Completed:
  - Mathematics: Calculus (A+); Linear Algebra (A); Ordinary Differential Equations (A); Real Analysis (A+); Complex Variables (A); Nonlinear Optimization (A)
  - Statistics: Probability and Statistics (A+); Methods of Data Analysis (A+)
• Dean's List Scholar (2021, 2022, 2023)
  - Awarded to University of Toronto's Faculty of Arts & Science students who obtain a CGPA of 3.50 or higher after completing their fifth, tenth, fifteenth, or twentieth degree credits.
• Ecology & Evolutionary Biology Undergraduate Student Research Award (May 2023)
  - Awarded $7500 by the University of Toronto's Department of Ecology & Evolutionary Biology to conduct a full-time research project during Summer 2023.

Research Experience

Dalla Lana School of Public Health, University of Toronto
Research Assistant, Disease Modeling (September 2024 – Present)
• Working in the Artificial Intelligence and Mathematical Modeling Lab (AIMM Lab) with Prof. Jude Kong.
• Building a compartmental model to explore an infectious disease outbreak scenario of the mpox (monkeypox) virus, aiming to identify optimal control strategies for managing disease spread.
• Conducting reviews of the literature and preparing weekly presentations to effectively communicate research progress in a clear and structured manner.

Department of Ecology & Evolutionary Biology, University of Toronto

Research Assistant, Spatial Ecology (May 2024 – August 2024)

• Worked in the Fortin Lab with Prof. Marie-Josee Fortin.

• Digitized over 1000 tree records, organized and entered it into a Microsoft Access database, and created datasets for analysis in spatial ecology projects.

Research Trainee, Quantitative Genetics (May 2023 – August 2023)

• Worked in the Osmond Lab with Prof. Matthew Osmond.

• Studied a partial differential equation, based on the moving optimum model, to model adaptation of populations to a changing environment and derived analytical formulas for mean fitness and the critical rate of environmental change.

• Presented findings to the lab at the end of the program and participated in weekly lab meetings discussing mathematical population genetics research.

Research Assistant, Evolutionary Genetics (August 2022 – November 2022)

• Worked in the Agrawal Lab with PhD student George Sandler.

• Analyzed growth data for evolutionary genetics experiments investigating the effect of asexual and sexual modes of reproduction on fitness by taking measurements of over 200 plants using ImageJ.

• Performed data entry of growth measurements using Microsoft Excel.

Plant Biology Technician (May 2022 – August 2022)

• Worked in the Agrawal Lab with PhD student George Sandler.

• Maintained samples of liverwort *Marchantia polymorpha*, as well as duckweed *Lemna minor* and *Spirodela polyrhiza*.

• Assisted with stock management and general laboratory maintenance.

Additional Experience

Krispy Kreme Doughnut Factory

Retail Specialist (July 2020 – July 2022)

• Guaranteed customer satisfaction by managing concerns, responding to feedback and providing a great customer experience.

• Fulfilled customer orders of doughnuts and drinks while maintaining quality control by ensuring all products are handled with care.

• Operated POS system and processed sales meticulously during periods of high volume.

• Achieved restaurant cleanliness by performing frequent cleaning on floors and tables, sanitizing equipment and servicing restrooms.