Joe Tran

Contact Information

Graduate Student, Mathematics and Statistics
Department of Mathematics and Statistics
York University

Email: joetran0@my.yorku.ca
Citizenship: Canadian

Education

Ph.D. Mathematics and Statistics (Pure Mathematics) 09/2025 (*expected*)
York University, Faculty of Graduate Studies, Department of Mathematics and Statistics

- Supervisor: Pavlos Motakis
- Research Area: Functional Analysis and Banach Space Theory
- Admitted to the Ph.D. program at York University; research to continue under the supervision of Prof. Pavlos Motakis.

M.A. Mathematics and Statistics (Pure Mathematics) 09/2024-Present
York University, Faculty of Graduate Studies, Department of Mathematics and Statistics

- Supervisor: Pavlos Motakis
- Research Area: Functional Analysis and Banach Space Theory

B.Sc. Mathematics for Education 09/2020-04/2024
York University, Faculty of Science, Department of Mathematics and Statistics

- Specialized Honours
- With Distinction
- GPA: 7.90/9.00

Research Interests

Banach space theory, operator theory, Schauder and unconditional bases, applications to partial differential equations, general topology, dynamical systems in population health, compartmental models (SIR, SEIR, SEIRS), geometric singular perturbation theory (GSPT).

Publications

1. Joe Tran, W. A. Woldegerima, *Singular perturbation analysis of a two-time scale model of vector-borne disease: Zika virus model as a case study*, Chaos, Solitons & Fractals 194 (2025), 116209.

Projects

Survey Paper on Banach Space Theory
M.A. Survey Paper 12/2024-Present

Singular perturbation analysis of a two-time scale model of vector-borne disease: Zika virus model as a case study
Summer Research Assistant 05/2024-03/2025

The Distance From Rank r Projection Operators to the Nilpotent Operators on $\mathbb{C}^n$
NSERC Undergraduate Summer Research Award 05/2023-08/2023

Predicting Wordle Results
Mathematical Contest in Modelling 02/2023

Presentations

- *Guest Speaker From York University: Q&A and Turning DNA into Numbers*, Dr. Norman Bethune Collegiate Institute (Bethune Math Club) 03/2024
- *The Distance From Rank r Projection Operators to the Nilpotent Operators on $\mathbb{C}^n$*, Faculty of Science Summer Research Conference 2023 08/2023

Volunteer Service

Department of Mathematics and Statistics, York University.

- Panellist at the *Ask me anything: Data Science, Math and Actuarial Science* Information Session 03/2025
- York Science 101 Panelist at the *Fall Open House* Event 11/2024
- Science Faculty Council 09/2024-Present
- Graduate Curriculum Committee 09/2024-Present
- Science Student Ambassador 09/2024-Present
- President of Club Infinity 06/2024-Present
- Brunch at York Science 04/2024
- Mathematics for Education Panellist at the *Ask Me Anything: Mathematics and Statistics Programs* Webinar Event 03/2024
- Volunteer for *Fall Open House* 11/2023
- Member of the Tenure and Promotion Adjudicating Committee of the Pure Mathematics Section 09/2023-04/2024
- Event Coordinator of Club Infinity 05/2023-06/2024
- Science Rendezvous 05/2023
- Volunteer for *Spring Open House* 03/2023

Honours, Bursaries, & Awards

- YU Graduate Fellowship - Masters Domestic 09/2024, 01/2025
- York Graduate Scholarship 09/2024
- York University Undergraduate Bursary 04/2024
- York University Continuing Student Scholarship 02/2024
- NSERC Undergraduate Student Research Award 05/2023-08/2023
- Member of Dean's Honour Roll 04/2021, 04/2023
- Abe Karass/Donald Solitar Award 03/2023
- Chair's Honour Roll in Mathematics and Statistics 11/2022
- York University Continuing Student Scholarship 08/2022
- York University Automatic Entrance Scholarship 08/2020

Teaching Experience

Teaching Assistant at York University.

- MATH 1013, Applied Calculus I – F23, W24, F24
- MATH 1014, Applied Calculus II – S23, W24, S25
- MATH 1021, Linear Algebra I – S23
- MATH 1025, Applied Linear Algebra – F23
- MATH 1200, Problems, Conjectures, and Proofs – F23 (TL), F24 (TL), W25 (TL)
- MATH 1300, Differential Calculus with Applications – S23, W25
- MATH 1506, Mathematics I for the Biological and Health Sciences – S24 (TL)
- MATH 1507, Mathematics II for the Biological and Health Sciences – W25
- MATH 1581, Business Mathematics I – S23
- MATH 2001, Real Analysis I – F24
- MATH 2015, Applied Multivariate and Vector Calculus – S25
- MATH 2022, Linear Algebra II – W24, W25