DANIEL TARNU

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EDUCATION

PhD Candidate, Simon Fraser University (SFU) — Expected Summer 2023
Mathematics – combinatorics and approximation theory with applications to number theory and information theory.

MSc, Western Washington University (WWU) — Sep 2017 - Jun 2019
Mathematics – dynamical systems and ergodic theory.

BSc, Western Washington University — Sep 2014 - Jun 2017
Mathematics

TEACHING

Volunteer Tutor — Nov 2022 - Present
Native Education College — *Vancouver, BC, Canada*

- Provided 1-on-1 math tutoring for introductory algebra.

Graduate Teaching Assistant — Sep 2019 - Present
Simon Fraser University — *Burnaby, BC, Canada*

- Tutored linear algebra, discrete math, precalculus, uni- and multivariate calculus, differential equations, and computer vision.

Graduate Instructor — Sep 2018 - June 2019
Western Washington University — *Bellingham, WA, USA*

- Acted as instructor and grader for intermediate algebra and business calculus.
- Collaboratively developed curricula.

PUBLICATIONS & PREPRINTS

- S. Choi and D. Tarnu, *Limiting behavior of Rudin-Shapiro sequence autocorrelations*, in preparation.
- D. Tarnu, *On maximal autocorrelations of Rudin-Shapiro sequences*, Journal of Approximation Theory, accepted.
- S. Choi and D. Tarnu, *The order of the fundamental solution of* $X^2 - DY^2 = 1$ *in* $\mathbb{Z}[\sqrt{D}]/\langle D\rangle$, Integers **22** (2022) article A84.
- S. Choi, P.C.H. Lam, and D. Tarnu, *Gap principle of divisibility sequences of polynomials*, Journal of Number Theory **223** (2021) 153-167.

ACCOLADES

Graduate Fellowship – Received Simon Fraser University's graduate fellowship in 2020 and 2022.

Travel and Research Award – Received travel and research grants from Simon Fraser University in 2021 and 2022.

Graduate Dean's Entrance Scholarship – Received nomination-only entrance scholarship from Simon Fraser University for 2019-2023.

Outstanding Graduate Student – Elected as the outstanding graduate student for the Western Washington University math department in 2019.

PROJECTS

Master's project *Basics of ergodic theory and a proof of Roth's theorem* – Survey of an ergodic proof of Roth's theorem on arithmetic progressions, starting from the basics of ergodic theory.

Erdős Institute *Plant phenology classification using computer vision* – Used iNaturalist data to classify roses as flowering or fruiting. Done through the 2022 Erdős Institute's Data Science Bootcamp.

TALKS

An Introduction to Ergodic Theory May 2019 and Feb 2020
Western Washington University and Simon Fraser University

PROGRAMMING SKILLS

Proficient in: Python/Sage, Rust, Maple, Mathematica, MATLAB
Familiar with: C++, MAGMA

CONFERENCES ATTENDED

Joint Mathematics Meetings 2023 Jan 2023
Various online number theory seminars 2020 - 2022
Oregon Number Theory Days Nov 2019
Oregon State University
Pacific Northwest Number Theory Conference Mar 2019
University of British Columbia
Combinatorial Potlatch Nov 2017 and Nov 2018
University of Victoria and Simon Fraser University
Weekly: SFU Number Theory & Algebraic Geometry Seminar, UBC Number Theory Seminar, WWU Mathematics Colloquium