

Benjamin Fattori

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EDUCATION	<i>Honours Bachelor of Science</i> University of Toronto Mathematics Specialist, Physics Major CGPA: 3.30/4.00 - Distinction (3.63/4.00 past two years)	2015 - 2020
RESEARCH EXPERIENCE	<i>Undergraduate Research Assistant</i> Department of Mathematics, University of Toronto Supervisor: Professor Adam Stinchcombe · Helped design a novel model of oscillatory behaviour in the reward pathway of the mammalian brain · Applied techniques learned in differential equations and math modelling courses · Used MATLAB and XPPAUT to analyze the behaviour of the system	March, 2019 - June, 2019
IN PREPARATION	<i>A Model of the Dopamine Regulated Circadian Oscillator</i> Adam. R. Stinchcombe, Martin Ralph, Cameron Martin, Benjamin Fattori	
TALKS GIVEN	· <i>The Density of Discriminants of Quartic Rings and Fields</i> MAT477: Introduction to Arithmetic Invariant Theory, University of Toronto · <i>Rings and Ideal Parametrized by Binary n-ic forms</i> MAT477: Introduction to Arithmetic Invariant Theory, University of Toronto · <i>Computing the K-Theory of $C(\mathbb{R}P^2)$</i> George Elliott's K -theory for C^* -algebras course University of Toronto	November 2019 October 2019 February 2019
PROJECTS	<i>Monte Carlo Methods for Computing the Dimension of Fractals</i> · Final project for PHY407: Computational Physics · Designed and implemented an efficient algorithm for estimating the box-counting dimension of many basic fractals using random sampling of points	December 2018
RELEVANT EMPLOYMENT EXPERIENCE	<i>Art of Problem Solving - Grader</i> Toronto, ON · Responsible for grading student responses to homework assignments · Provide clear and detailed feedback to student submissions · Courses graded include number theory, combinatorics, algebra, and calculus	April, 2019 - Present
COMPUTER SKILLS	· Python: Experienced; Used alongside SciPy, in computational physics courses and pure CS courses · MATLAB: Experienced; Used in math research for simulations, solving differential equations, and examining the behaviour of dynamical systems · XPPAUT: Comfortable; Used in math research for producing bifurcation plots and further examining the behaviour of dynamical systems · L^AT_EX: Experienced; Used for typesetting course notes and problem sets since third year	