

GEORGE SHILLCOCK

Liverpool, Great Britain
g.shillcock@live.com \diamond g-shillcock.github.io

A researcher in mathematical biology and graduate student who thrives in curiosity driven science, interested in epidemiology, ecology and evolution. Also a skier, cyclist, boulderer and guitar fanatic.

HIGHER EDUCATION

University of Oxford

DPhil Interdisciplinary Bioscience

October 2022 – Present

Western University

M.Sc. Applied Mathematics

September 2020 – May 2022

Awarded a graduate fellowship to research the consequences of mixed mode transmission on the coevolution of host-parasite systems. Organised a mathematical biology seminar called ‘Flower Hour’. Took courses in numerical analysis, mathematical biology, neural networks and scientific computing.

University of Glasgow

Mathematics MSci.

Second Class Division 1

September 2014 – June 2019

Fifth year: Thesis completed on discrete iterated maps, which classified the local stability types of dynamical systems by considering the principle invariants of the Jacobian matrix.

Fifth year courses: Advanced methods in differential equations, applied asymptotic methods, elasticity, classical field theory.

Fourth year research project: Catastrophe Theory

Involved deriving conditions under which families of functions were structurally stable under perturbation, from which the canonical forms of universal unfoldings of germs were induced. These concepts were applied to the psychology of stress in competitive athletes.

Fourth year courses:

Continuum mechanics & elasticity (A5), fluid mechanics (C2), mathematical biology (B1), mathematical physics (A2), numerical methods (B1), partial differential equations (C1)

Third year: Simon Fraser University

International Exchange

Vancouver, Canada

September 2016 - June 2017

Studying abroad required me to adapt to a new school system with a significant course work component. My ability to communicate and collaborate with a diverse group of colleges and friends was pivotal in succeeding. Living in a new country and adjusting to new cultures required me to be resilient and gave me a global outlook.

Other courses:

Mathematics (A3, B1), computer science (C2), philosophy (C1), physics (B2)

TECHNICAL SKILLS

Programming languages	Python, MATLAB, Mathematica, Maple
Software & Tools	L ^A T _E X, Microsoft Office
Published online resources	Wolfram Demonstrations

CONFERENCES

Mathematical Models in Ecology and Evolution

July 2022

Presented a poster about the co-evolution of virulence in systems with mother-to-offspring transmission.

Tomorrow’s Mathematicians Today in association with the IMA.

February 2019

Gave a talk at the University of Greenwich on iteration, recursive functions, and the connection between the Ackermann function and hyper-operations.

WORK EXPERIENCE

Tutor

Self Employed

September 2021 – September, 2022

London, Canada

Teaching first- and second-year undergraduate level courses in mathematics such as calculus, linear algebra, and methods of finite mathematics. Providing methods of revision and demonstrating how to reason and express mathematical ideas optimally. In this role I employed concise and clear expression, a patient and engaging attitude, and knowledge of the misunderstandings typical of those new to the subject.

Teaching Assistant - Mathematical Biology

University of Western Ontario, Mathematics Department

January 2022 – March 2022

London, Ontario

Proctoring, running tutorials, and grading the continuous assessments of second year mathematics students. I communicated effectively with my colleagues to maintain a fair and standardised response, and my growth-orientated attitude helped students to progress.

Tutor

Caledonia Tutors

September 2020 – September, 2022

Glasgow, Scotland

Teaching high school level mathematics courses for students preparing for A-level, SQA higher, and national 4 and 5 exams. I utilised my creativity, persistence, and knowledge of active learning techniques to keep the attention of young students while working remotely.

Teaching Assistant - Various courses

University of Glasgow, Mathematics Department

October 2018 – April 2019

Glasgow, Scotland

Grading and providing feedback on the continuous assessments of second year mathematics students. I communicated effectively with my colleagues to maintain a fair and standardised response, and my growth-orientated attitude helped students to progress.

Alumni Telephone Campaigner

University of Glasgow, Development and Alumni Office

February – April 2016

Glasgow, Scotland

I engaged with Alumni to continue their involvement in the university and raised funds for university initiatives and its charity trust. My ability to collect information whilst maintaining a personable and professional conversation was essential to this role.

Commis Chef

Hotelplan UK

November 2019 – March 2020

Tignes, France

As a part of a diverse team working in a fast-paced kitchen, I was required to delegate tasks efficiently and communicate effectively, while maintaining a high attention to detail. This role extensively tested my mental stamina and ability to remain calm under pressure.

ACHIEVEMENTS & CERTIFICATES

SHARCNET High Performance Computing Summer School

Certificate in Equality & Diversity (CPD)

Protecting Vulnerable Groups (PVG) scheme member

Sports Leadership UK Level 1

National Academy for Gifted and Talented Member

Academic Integrity Module (UWO)

Silver Duke of Edinburgh Award

Prefect at Chesterfield High School

Liverpool Physics Olympics Round Winner

Young Engineers Certificate Award

REFEREES

Available upon request.