

Samuel Charles

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Education

University of Oxford <i>DPhil Mathematics, focussing on Partial Differential Equations</i>	Oct 2022 – Present <i>Oxford, Oxfordshire, United Kingdom</i>
University of Cambridge <i>MASt Pure Mathematics</i> <i>Grade: Distinction</i>	Oct 2020 – Jun 2021 <i>Cambridge, Cambridgeshire, United Kingdom</i>
University of Warwick <i>BSc Mathematics</i> <i>Grade: First</i>	Oct 2017 – Jun 2020 <i>Coventry, Warwickshire, United Kingdom</i>

Research Experience

DPhil Research <i>University of Oxford, Mathematical Institute</i> <ul style="list-style-type: none">• Currently working on a problem relating to proving global existence and nonlinear stability of solutions to the Compressible Euler-Riesz equations.• Supervised by Professor José Carrillo and Professor Gui-Qiang Chen.	Oct 2022 – Present <i>Oxford, Oxfordshire, United Kingdom</i>
Summer Research Project <i>University of Warwick, Mathematics Institute</i> <ul style="list-style-type: none">• Implemented a machine learning algorithm for solving Partial Differential Equations with high dimensional domains, that can't be typically solved via standard numerical methods.• Worked on the theory and adapted the algorithm to work for Partial Differential Equations with a more general domain.	Jul 2020 – Sep 2020 <i>Coventry, Warwickshire, United Kingdom</i>

Other Experience

Teaching Assistant <i>University of Oxford, Mathematical Institute</i> <ul style="list-style-type: none">• I am responsible for the marking of students assignments and assisted in the teaching of mathematics courses, such as Fourier analysis and functional analysis.	Oct 2022 – Present <i>Oxford, Oxfordshire, United Kingdom</i>
Teaching Assistant <i>African Institute for Mathematical Sciences</i> <ul style="list-style-type: none">• Assisted in the teaching of a masters course in mathematics by planning group and individual tutorials as needed, contributing to the assessment of student performance on an ongoing basis, preparing instructional materials and additional exercises as needed and more.	Nov 2021 – Jul 2022 <i>Cape Town, Western Cape, South Africa</i>

Publications

- Pride Duve, Samuel Charles, Justin Munyai, Renke Lühken, Peter Witbooi. A mathematical model for malaria disease dynamics with vaccination and infected immigrants. *Mathematical Biosciences and Engineering*, 2024, 21(1): 1082-1109. doi: 10.3934/mbe.2024045

Awards & Honors

Sloane Robinson Foundation Graduate Scholarship

University of Oxford, Lincoln College

2022–2026

Awarded a titular scholarship for academic achievement

University of Cambridge, Clare Hall College

2021

Departmental prize for ‘Outstanding academic achievement’

University of Warwick, Mathematics Institute

2020

Specialized Skills

Programming Languages: Python (intermediate), TensorFlow (intermediate), MATLAB (intermediate), R (beginner), Java (beginner).

Other Interests

Sports: Badminton, Surfing.