willieaboumrad

contact

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languages

bilingual
English/Spanish
conversational
French/Arabic

programming

MATLAB, Julia,
Python, C++,
SageMath, Java, R

interests

Applications of mathematical theory to the solution of real-world problems. My current research focuses on problems related to Topological Quantum Computing.

research

2018– Studying the algebraic structure of anyon models in order to develop a topological quantum computer, whose qubits are intrinsically less sensitive to error than those processed by a conventional quantum computer.
Stanford University

2018– Developing a SageMath package which can compute properties of unitary modular tensor categories arising from quantum groups.
Stanford University

education

2018– **Ph.D.** candidate in Computational and Mathematical Engineering
Advisor: Prof. Daniel Bump
Stanford University

2016–2018 **M.S.** in Computational and Mathematical Engineering
Stanford University

2014–2017 **B.S.** in Mathematics, with distinction
Advisor: Prof. Andras Vasy, GPA: 4.0
Stanford University

2014 **International Baccalaureate**
Worth School, on merit scholarship

experience

Fall 2018 **Primary Instructor** Stanford University
Introduction to MATLAB

Sum 2018 **Mathematics Instructor** Stanford University
Calculus I and II, and Linear Algebra at the Summer Engineering Academy

Sum 2018 **Primary Instructor** Stanford University
Introduction to Scientific Computing

2016– **Teaching Assistant** Stanford University
Scientific Computing, Vector Calculus, Differential Equations, Linear Dynamical Systems

2015– **Mathematics Tutor** Stanford University
Calculus, Vector Calculus, Linear Algebra, Probability & Statistics, Differential Equations

Sum 2017 **Research Mentor** Stanford University
Model-order-reduction via neural networks to accelerate metal 3D printing simulations.