Lucas Z. Brito

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Education

2014-2020 The Overlake School, Redmond, WA

2020-2024.5 Brown University, Providence, RI. B.Sc. in Mathematical Physics and Computer Science

Publications

2022 *PULSEE: A software for the quantum simulation of an extensive set of magnetic resonance observables,"* Davide Candoli, Ilija K. Nikolov, **Lucas Z. Brito**, Stephen Car, Samuele Sanna, Vesna F. Mitrović. [doi:10.1016/j.cpc.2022.105898]

Other Research

2021 Strong gravitational lens classifier in long-exposure DECaLS survey using a residual neural network. Under Ian Dell'Antonio.

2021 Differential simulation of active Brownian particles in arbitrary confinements. Under Hamid Karani.

2022-pres. Hamiltonian reconstruction - diagnosing incomplete operator bases from reconstruction error. Under Brad Marston.

Employment

2017-2018 Assistant instructor, Play-Well Teknologies

2022 Teaching Assistant, APMA1930W - Probabilities in Quantum Mechanics

Skills

Programming Languages: Python (Scipy, Numpy, Matplotlib/Seaborn, SKLearn, Pandas), Julia, Java, Javascript (React, Vue), HTML, CSS, SQL, LaTeX, bash scripting (Slurm, Git).

Software: MATLAB, Mathematica, Excel, Ableton Live, Adobe Suite, Blender.

Languages: English, Portuguese, Spanish (conversational).

Coursework

Physics: Analytical Mechanics (PHYS2070), Advanced Classical Mechanics (PHYS0500), Electricity and Magnetism (independent study), Advanced Electromagnetic Theory (PHYS1510), Quantum Mechanics (PHYS2050, PHYS519, graduate), Advanced Quantum Mechanics (PHYS2070, graduate), Advanced Statistical Mechanics (PHYS2470, graduate).

Computer Science: Accelerated Introduction to Computer Science (CSCI0190), Data Science (CSCI1951A), Introduction to Software Engineering (CSCI0320), Interdisciplinary Scientific Visualization (CSCI3270, graduate).

Mathematics: Single-variable Calculus, Multivariable Calculus, Linear Algebra, Ordinary Differential Equations, Partial Differential Equations (MATH1120), Abstract Algebra (MATH1530), Complex Analysis (MATH1260).

Outreach

2021-pres. Undegraduate Physics Journal Club, Co-Head