

John Bergschneider

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EDUCATION

Florida State University

Ph.D. in Mathematics

- Dissertation: Classifying 2-stratifolds with Finite and Abelian Fundamental Group

August 2014 – July 2020

Tallahassee, Florida

EXPERIENCE

Assistant Professor of Mathematics

University of North Georgia

- Active researcher in geometric/algebraic topology
- Taught Cryptography, Data Science 101, and Calculus II

August 2020 - Present

Dahlonega, Georgia

Graduate Teaching Assistant

Florida State University

- Taught Calculus I-III, Linear Algebra, Ordinary Differential Equations
- Organized research groups in low dimensional topology

June 2016 - June 2020

Tallahassee, Florida

PROJECTS

Cryptography Primitives | *Python, Jupyter Notebook* | [Github Repo](#) | [Course Site](#)

May 2021 – Present

- Cracked the Vigenere Cipher using statistical attack on english letter frequency
- Verified the accuracy of the Miller-Rabin primality test by proof and simulation
- Implemented a probabilistic random number generator using the Miller-Rabin primality test

Interacting with EVM | *Solidity, Python, Web3, Git* | [Github Repo](#)

March 2021 – Present

- Built python scripts to send ether, deploy contracts, and interact with smart contracts
- Audited Uniswap-V2-Core/Periphery contracts to understand pair tokens and flash swaps
- Wrote API that interacts with UniswapV2Router to swap tokens and add/remove liquidity

Software for Data Science | *HTML/CSS, NBgitpuller* | [Github Repo](#) | [Course Site](#)

December 2020 – Present

- Built course site that connects accounts on Jupyterhub to assignments from github repository
- Integrated test files for verifying correctness of solutions in programming assignments
- Updated programming lectures and assignments to focus on statistical concepts and linear regression
- Collaborated with IT department to update libraries on Jupyterhub

LEADERSHIP

Mentor | *Association for Women in Math-FSU Chapter*

September 2019 – Spring 2020

Council Person | *FSU Graduate Student Council*

August 2018 – August 2020

AWARDS

Distinguished Teaching Assistant Award

April 2019

FSU Dean's Scholarship

August 2016 – August 2019

Qian Endowment for Excellence Travel Support

November 2018

TECHNICAL SKILLS

Languages: Python (Highly Proficient), Solidity, HTML/CSS, Latex, Markdown

Developer Tools and Libraries: Git, Jupyterhub, Spyder, Remix, Brownie, Datascience, NumPy, Web3

Domain Knowledge: Group Theory, Topology, Linear Algebra

Current Research: Cryptography, EVM, Automated Market Makers, Decentralized Banks, Smart Contracts

Other Languages: Spanish (Conversational)