John Bergschneider

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EDUCATION

Florida State University — August 2014 – July 2020
Ph.D. in Mathematics — *Tallahassee, Florida*
- Dissertation: Classifying 2-stratifolds | Full Link | Preprint Link

EXPERIENCE

Assistant Professor of Mathematics — August 2020 - Present
University of North Georgia — *Dahlonega, Georgia*
- Active researcher in algebraic topology
- Taught Cryptography, Data Science 101, and Calculus II

Graduate Teaching Assistant — June 2016 - June 2020
Florida State University — *Tallahassee, Florida*
- Taught Calculus I-III, Linear Algebra, Ordinary Differential Equations
- Organized research groups in low-dimensional topology

PROJECTS

Cryptography Primitives | *Python, Jupyter Notebook* | Github Repo | Course Site — May 2021 – July 2021
- Created a cryptography course on private and public key encryption schemes
- Cracked the Vigenere cipher using statistical attack on english letter frequency
- Verified the 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 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 an API that interacts with UniswapV2Router to swap tokens and add/remove liquidity
- Currently working on pull requests for Yearn Finance and the Solidity Compiler

Software for Data Science | *HTML/CSS, NBgitpuller* | Github Repo | Course Site — December 2020 – Present
- Created an introduction to data science course using python as the programming language.
- Built a course site that connects accounts on Jupyterhub to assignments from Github repository
- Integrated test files for autograding of programming assignments
- Collaborated with the IT department to update libraries on Jupyterhub

LEADERSHIP

Mentor | *Association for Women in Math–FSU Chapter* — September 2019 – March 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, C++
Developer Tools and Libraries: Git, Jupyterhub, Spyder, Remix, CircleCI, Datascience, NumPy, Web3
Domain Knowledge: Group Theory, Topology, Linear Algebra
Current Research: Cryptography, EVM, Automated Market Makers, Smart Contracts
Other Languages: Spanish (Conversational)