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COURSEWORK

Mathematics:
- Graduate
  - Real Analysis I, Numerical Solutions to Partial Differential Equations I
- Undergraduate
  - Applied Dynamical Systems, Topics in Abstract Algebra I & II, Real Analysis, Statistical Inference, Abstract & Applied Linear Algebra, Applied Ordinary & Partial Differential Equations, Single & Multivariable Calculus

Computer Science:
- Graduate
  - Deep Learning
- Undergraduate
  - Design and Analysis of Algorithms, Data Science, Blockchains and Cryptocurrencies, Fundamentals of Computer Systems, Algorithms & Data Structures, AP CS A

Directed Reading Programs:
- Graduate Functional Analysis: Official write-up
- MathILy - Topological Graph Theory, Complex Analysis: Course summaries

WORK EXPERIENCE

Teaching Assistant — Brown University
MATH1530 Abstract Algebra Lead TA — *May 2021 – Aug 2021*

Provided weekly feedback on problem sets and held weekly office hours for a class of **30 students**.

Everaise Academy — Virtual
Curriculum Developer and TA — *Jun 2020 – Present*

Composed several handouts on **number theory** and **combinatorics** at the high AIME and olympiad level. Held office hours and graded homework for **100+ students**. Official website

PROJECTS

DisasseML: Machine Learning Disassembler — Systems Programming & Machine Learning

x86 disassembler to AT&T and Intel syntaxes using an encoder—decoder architecture with either **GRU** or **LSTM** cells implemented using **TensorFlow**, **scikit-learn**, and **NumPy**. Code Repository

Kibibyte: Text Editor in <1 KiB — Systems Programming

Text editor written in pure **C** featuring VT100 syntax highlighting, Vim-like scrolling, edit history, and built-in macro support. Portable for all POSIX-compliant systems. Code Repository

BrunoCoin: Fully Functional Cryptocurrency — Blockchain Programming

Proof-of-concept **cryptocurrency** and **blockchain** from scratch in **GoLang** and **gRPC** in a **multi-threaded environment**. Based on design described in Bitcoin's whitepaper. Code Repository

Traffic Collisions in LA — Data Science

Performed rigorous analysis of collision data in LA from 2010-2020 using **Numpy**, **Geopandas**, and **scikit-learn**. Utilized **vector autoregression** and **multiple linear regressions**.

SKILLS

Programming: *Proficient in* Python, GoLang, C++, MATLAB, SQL; *Experience in* Solidity, Java
Tools: *Proficient in* Git, Bash; *Experience in* gRPC, GTest for C++, NMap
Design: *Proficient in* LaTeX, Markdown; *Experience in* CSS, PHP, HTML5
Languages: Russian (fluent), Spanish (business professional)

PUBLICATIONS

Preprint: *An Integrated Introduction to Abstract Algebra*, 391 p., editor — 2020 - Present

Edited exposition and exercises in an upcoming textbook covering groups, rings, fields, Galois theory, and module theory written by Brown University professor Joseph Silverman

Journal Problems:

- *The Mathematical Gazette*: 103.D, 103.I
- *College Mathematics Journal*: 1177

AWARDS

USA Math Talent Seach Bronze (2018, 2020), Silver (2019) Winner — Top 40 Nationally

Google Code Jam Round 2 Qualifier 2020 — Top 30,000 Internationally

USA Computing Olympiad Silver Winner 2020 — Top 5,000 Nationally