

## 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

\* Database Management Systems, 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++, SQL; *Experience in* Solidity, Java, JavaScript

**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 Search 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