SEBASTIAN COATES

Graduating May 2020

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WORK EXPERIENCE

Software Engineering Intern

Bank of America

📅 06/2017 - 08/2017   📍 Charlotte, NC

- Used machine learning (reinforcement learning and super resolution) to improve OCR. Worked primarily with Python and TensorFlow.
- Developed a secure contract for loans using Solidity and the Ethereum Blockchain.
- Participated in Agile training.

Computer Science Teaching Assistant

Tufts University

📅 09/2017 - Ongoing   📍 Medford, MA

- Assisted in Data Structures and Machine Structure/Assembly courses.
- Led labs - taught material and helped students problem solve.
- Held weekly office hours and worked one-on-one with students.

PROJECTS

Graph Isomorphic Encryption

- Applied theory of graph isomorphism to develop new method of data encryption with brute-force time complexity of $O(n!)$.
- Used C++ to produce fast encryption / decryption times and effectively manage memory.

C Language Compiler

Compiles C source code to 'Universal Machine' CPU instructions.

- Using 14 CPU instructions, supports following C features:
- Nested loops/conditionals, basic function calls, variables, dynamic memory allocation, IO, and math & bitwise operations,

Jazz Improvisation A.I. (Group Project)

Responds to user input with computer generated improvisation.

- Led group of 5 to create project at Polyhack 2017.
- Used Markov Chain to train improviser from recorded jazz solos.
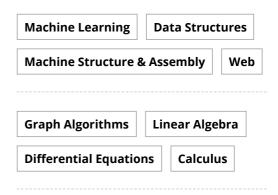
Slave Free Trade DApp (Group Project)

Logs worker payment history on the Ethereum Blockchain.

- Led group to create project at IDHack 2018.
- Developed Smart Contracts using Solidity, linked to Node.JS backend.

LANGUAGES

C/C++   Proficient

Python   Proficient

Solidity   Proficient

Java   Knowledgeable

Go   Knowledgeable

RELEVANT COURSES

| Machine Learning | Data Structures |

| Machine Structure & Assembly | Web |

| Graph Algorithms | Linear Algebra |

| Differential Equations | Calculus |

EDUCATION

B.S. Computer Science, B.S. Applied Math

Tufts University School of Engineering

📅 09/2016 - 05/2020

GPA
3.98 / 4.00