# **SEBASTIAN COATES**

**Graduating May 2020** 

**415-261-8149** 

Sebastian.Coates@tufts.edu

% sebastiancoat.es

## **WORK EXPERIENCE**

#### Blockchain Intern

#### **Vertex Pharmaceuticals**

- Developed full-stack decentralized web application for clinical trial processes, using Ethereum, Solidity, Nodejs, and MySQL.
- Prepared 4-hour presentation for company CIO and other department representatives to explain Blockchain technology and various possible applications in the pharmaceutical industry.
- Applied penetration testing methodologies to ensure security in smart contracts and web APIs.

### Software Engineering Intern

#### **Bank of America**

- 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.

# **PROJECTS**

#### Music Information Retrieval

% https://github.com/sebasscoates/graphmir

A graph-based approach to music information retrieval.

- Enabled 98% accuracy in binary genre classification and 92% accuracy in binary artist classification (same genre).
- Wrote formal paper analyzing the full project, included in GitHub.

### 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,

### **Graph Isomorphic Encryption**

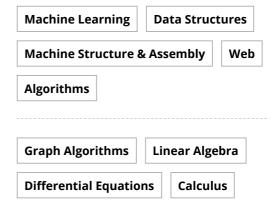
% https://github.com/sebasscoates/isomorph

- 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.

### **LANGUAGES**

Python	Proficient
С	Proficient
Solidity	Proficient
Javascript	Knowledgeable
Go	Knowledgeable

### **RELEVANT COURSES**



# **EDUCATION**

B.S. ComputerScience,B.S. Applied Math

GPA

**3.96** / 4.00

Tufts University School of Engineering

**1** 09/2016 - 05/2020



