

SEBASTIAN COATES

Graduating May 2020

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🌐 sebastiancoat.es

WORK EXPERIENCE

Blockchain Intern

Vertex Pharmaceuticals

📅 06/2018 - 08/2018 📍 Boston, MA

- 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

📅 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.

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

C/C++

Javascript

Solidity

Go

Java

RELEVANT COURSES

Machine Learning

Data Structures

Machine Structure & Assembly

Web

Algorithms

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

3.96 / 4.00