Jonathan Buhler

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Education

University of Edinburgh
(2017 - 2022)
Integrated Masters in Informatics

Stuyvesant High School
(2013 - 2017)
NYC Specialized H.S.

H.S. Exam Scores

SAT: 1540 (out of 1600)
AP Exams (≈ A Levels):
- Calculus BC: 5 (out of 5)
- Computer Science: 5
- English Language: 5
- US History: 5
- European History: 5

Hons. University Marks

4th Year: 70% (US: 4.0)
3rd Year: 81% (4.0)

Technical Skills

Languages:
- Python
- JavaScript
- TypeScript
- Swift
- C++
- Solidity
- Java

Platforms:
- TensorFlow
- PyTorch
- scikit-learn
- OpenCV
- SwiftUI
- SQL
- Node.js

Interests

- Hillwalking
- Photography
- Model United Nations
- Graphic Design

Profile

Fifth-year integrated informatics masters student at the University of Edinburgh, concentrating in machine learning. Raised in New York City, fluent in English and German with US, UK, and German citizenship.

Projects and Relevant Coursework

Masters Project (2021 - 2022)
- Researching the exposure-response relationship between particulate matter in the air and breathing rates
- Using machine learning to predict future breathing rates of subjects given a series of time indexed air quality data points

Honors Project (2020 - 2021)
- Successfully researched how to reproduce human-like behavior in game theory with autonomous agents
- Used reinforcement learning with Python and TensorFlow

Galaxy Image Generation using GAN (2021)
- Built a generative adversarial network with PyTorch to generate realistic 128x128 images of galaxies
- Trained on large astronomy dataset using a pipeline that I also built

Cryptocurrency Trading Bot (2020)
- Built autonomous trading bot that would scrape price predictions from the web using Puppeteer, then rebalance portfolio using the CCXT library
- Coded in TypeScript, hosted on Raspberry Pi, and run with TS-Node

Tesco Delivery Slot Detector (2020)
- Built web scraper to monitor Tesco's site for availability
- Made during pandemic for my grandparents, focused on ease of use and reliability

Formula Student AI Division (2019)
- Worked on the Planning & Control Team designing a self-driving race car
- Researched and implemented intelligent algorithms for yearly competitions

Hack The Burgh - International Hackathon (2019)
- Using TensorFlow and OpenCV, built a smoking detection bot
- Team won the ARM challenge

SpaceX HyperLoop Competition (2019)
- Worked on telemetry for high-velocity pod in yearly SpaceX competitions
- Coded pod communication and front-end display in JavaScript
- Built framework for a modular system-status dashboard

Google Hash Code (2019)
- Top of Edinburgh in extended round (239 / 3000 worldwide)

System Design Project (2019)
- Built robot on TurtleBot platform that was capable of accurately returning to station from anywhere in the room, aligning itself, and docking
- Coded in Python and C++ using R.O.S and OpenCV
- Successfully managed team of 8 students

Work Experience

Consensys (2018)
- Interned as a software engineer for the Pegasys R&D division
- Worked on EthQL, a GraphQL interface to Ethereum, coded in TypeScript
- Learnt about working in an AGILE team as well as working remotely with team members
- Received commendations for inventive problem solving, quick learning, and work ethic