






Noah Burkhardt

Active Security Clearance: DoD Top Secret

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Education

University of Maryland: College Park — *B.S. in Computer Science*
GPA: 3.76 ACES Honors College Minor in Mathematics
August 2017–December 2020

Experience

TD Ameritrade — *Infrastructure/Cloud Delivery Services Intern*

June 2020–August 2020

- Wrote scripts to automate several cloud provisioning processes resulting in a 90% reduction in ticket backlog.

Parsons Cyber — *Computer Science Intern*

June 2019–August 2019

- Developed a traffic generator for a network simulation tool, written in Python. Utilized Docker, Nginx, RabbitMQ, and scrapy.

June 2018–August 2018

- Developed and designed the user interface of a web-based HR solution written on a MariaDB/Django backend and a VueJS frontend.

Chick-fil-A — *Manager, Personal Trainer, Team Member*

August 2016–August 2018

Research

Reinforcement Learning Game Playing — *Spring 2020*

- Designed and developed a game simulation tool loosely based on chess, then trained a reinforcement learning agent using Deep Q-learning and Actor Critic models. The trained agent performed 98% better than the control agent.

Natural Language Processing Lyrical Analysis — *Fall 2019*

- Used NLP methods such as sentiment analysis and TF-IDF to determine the similarity between song lyrics on the Billboard Top 100, then used the same methods to show a positive correlation between profanity in music and popularity on platforms like Spotify.

Blockchain Voting System — *Fall 2018*

- Prototyped a blockchain-based voting system which exposed a REST API frontend to allow for easy interaction. Conducted a survey afterwards to determine favorability of this system over the current voting implementation.

Personal Projects

Loopi — *iOS App, Swift + SwiftUI, analysis done in Python*

- Currently developing an app that discovers loop points in songs using the fast Fourier transform, audio feature extraction, and various statistical methods. App includes a player to play looped songs.

Languages

- Python [Proficient]
- Java [Proficient]
- Swift [Moderate]
- Bash Scripting [Moderate]
- C [Moderate]
- OCaml [Moderate]
- MATLAB [Moderate]
- Mathematica [Moderate]
- HTML/CSS [Moderate]
- JavaScript [Moderate]
- x86 Assembly [Beginner]
- Ruby [Beginner]
- Rust [Beginner]
- Visual Basic.NET [Beginner]
- SQL [Beginner]

Tools/Techniques

- Agile Scrum
- iOS App Development
- Data Science
 - SciPy Stack
 - Web Scraping
 - Map + Reduce
- Basic Machine Learning
 - Neural Networks
 - Reinforcement Learning
- Reverse Engineering
 - Static Analysis
 - Disassembler (IDA Pro)
- Android App Development
- Functional Programming
- Docker