Andrew Burford

aburford.github.io | linkedin.com/in/andrew-burford
andrewsburford@gmail.com | 203-707-0801

EDUCATION

STONY BROOK UNIVERSITY

Aug 2018 - Dec 2021
B.S. Computer Science GPA: 4.0
B.S. Applied Math & Stats GPA: 4.0

Jan 2022 - Dec 2022
M.S. Computer Science

SKILLS

PROGRAMMING

Fluent in:
Python • C • C++ • Javascript • Java
Proficient in:
MIPS • Ruby • Swift • HTML/CSS • Lua

SYSTEMS AND LIBRARIES

Professional experience with:
Linux • Bash • Git • PyTorch • Rails
Coursework with:
LLVM • Z3 SMT Solver • MERN Stack

MATHEMATICS

Coursework in:
Probability & Statistics • Graph Theory
Linear Algebra • Differential Equations
Multivariate Calculus • Applied Algebra

EXTRACURRICULARS

Stony Brook Running Club
President Aug 2020 - May 2021
Secretary Aug 2019 - May 2020

Stony Brook Competitive Programming Club
Team Competitor Sep 2019 - Present

AWARDS

Eagle Scout 2018

Stony Brook Competitive Programming Contest
1st place in Senior Category 2020
2nd place in Junior Category 2019

Greater New York ICPC Regional Programming Contest
3rd out of 55 teams 2021
12th out of 65 teams 2019

NIRCA Cross Country Northeast Regional
4th place individual 2021

PROFESSIONAL EXPERIENCE

FILESYSTEMS AND STORAGE LAB — Stony Brook, NY
Research Assistant — May 2021 - Present

- Work on project incorporating machine learning into Linux kernel for purpose of tuning operating system parameters
- Debug and benchmark multiple machine learning methods applied to optimization of disk cache configuration

MILESTONE C — Woodbridge, CT
Software Engineer / Course Designer — May - Aug 2021

May - Aug 2020

- Designed and developed educational games in Javascript for high school students to learn STEM subjects
- Formulated lesson plans, slideshows, and example projects for capstone programming course teaching students to create Internet-of-Things devices with a Raspberry Pi

STONY BROOK UNIVERSITY — Stony Brook, NY
High Performance Computing Engineer — Feb 2019 – May 2021

- Performed software environment maintenance for hundreds of packages and libraries in wide range of languages on Linux cluster
- Compiled, optimized, and profiled software across variety of hardware
- Resolved customer service tickets by troubleshooting system issues on university's high performance computing cluster

FCE CONSULTANTS — Orange, CT
Software Development Intern — Jun – Aug 2018

- Developed data scraping programs in Python to efficiently scrape business contact information from websites, PDF's, and images
- Designed and implemented data cleaning and interpolation scripts to merge together contact information from thousands of businesses

PROJECTS

NEURAL NETWORK VERIFICATION RESEARCH PAPER
Independent Class Project — Sep - Dec 2021

- Researched state of the art neural network verification techniques
- Modified existing verification algorithm to support sigmoid activation function and benchmarked performance against alternative tools
- Wrote paper and presentation communicating findings

DIEMBFT IMPLEMENTATION
Group Class Project — Sep - Dec 2021

- Implemented DiemBFT distributed consensus protocol in Python to create Proof of Concept blockchain
- Integrated state of the art testing techniques for Byzantine Fault Tolerant systems to prove the safety and liveness of the system

RUN LOGGER (IOS APPLICATION)
Solo Passion Project — 2016 - 2017

- Independently designed and developed from scratch fully functional iOS application published on iOS App Store
- Allowed runners to easily track and record runs directly from iPhone, iPad, or Apple Watch