Andrew Cascio

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Education

Vanderbilt University December 2023
Bachelor of Science — Computer Science (*Honors*), Mathematics *Cum Laude* — GPA: 3.88/4.00

Experience

Amazon May 2023 – August 2023
Software Development Engineer Intern

- Expedited time to Alexa Voice Service certification and eliminated physical device dependencies for 8+ internal development teams by engineering lab-less self-testing feature in Java
- Found and rectified inconsistencies in code to remove ambiguity and simplify Away Team development experience
- Remodeled AVS developer self-testing portal by adding new test configuration options with React and Redux
- Presented 2 projects leveraging 5+ AWS services to senior management and launched one into production

Institute for Software Integrated Systems August 2022 – May 2023
Research Assistant

- Enhanced data security for DARPA by integrating encryption into autopilot codebase installed in 1M+ vehicles
- Programmed a socket-based client-server network to automate the encryption of drone status messages by implementing RSA for key sharing and the Advanced Encryption Standard (AES) for message passing

Ford Motor Company June 2022 – August 2022
Software Engineer Intern

- Managed team of 6 to develop general-purpose survey tool that cut average creation time from 2 hours to minutes
- Built a RESTful API with Spring supporting all CRUD operations to interface with MongoDB to store surveys
- Configured a CI/CD pipeline with Jenkins to ensure production builds were automatic and stable

Vanderbilt University August 2021 – December 2022
Teaching Assistant

- Conducted office hours 3 times a week for 3 different computer science classes to teach reusable software design patterns, data structures, the C++ Standard Template Library, and object-oriented programming in Python
- Advised 285 students by offering constructive, personalized feedback while grading homework and exams

Projects

COOL Compiler | *Python, PLY (Python Lex-Yacc)*

- Designed an end-to-end optimizing compiler for an imperative, strongly-typed, object-oriented language
- Executed lexical analysis, generated an LALR parser, wrote a semantic analyzer, and produced x86-64 Assembly

URL Classification | *Python, NumPy, Keras*

- Classified legitimate and phishing URLs with K-Nearest Neighbors, Support Vector Machine, and Neural Network
- Employed dimensionality reduction with Principal Component Analysis and applied filter feature selection to achieve an accuracy of 95.9% with a dataset consisting of 11430 real URLs
- Leveraged Matplotlib to visualize test accuracies and training times analyzed in an ICML paper

Onion Router | *Linux, Python, Mininet*

- Developed auto-scaling network topologies with Mininet to simulate and test custom onion routing algorithm
- Configured hosts, switches, and routers to pass bytes over TCP encrypted with AES symmetric keys

Connect 4 Player | *C#, Unity*

- Implemented the Minimax algorithm with alpha-beta pruning and evaluated efficiencies at various search depths
- Incorporated algorithm into a stand-alone video game designed with the Unity cross-platform game engine

Student Fitness Tracker | *React Native, Firebase, Expo*

- Coordinated with client to build OS-independent mobile application for instructors to record students' progress
- Maintained records with Google's Firebase to offer low latency access and authentication for data security
- Launched on Apple's TestFlight for easy distribution and version testing for 10+ users