VANDERBILT UNIVERSITY

Austin J. Hunt

Vanderbilt University School of Engineering | M.S. in Computer Science Portfolio

Part Time Student | Entered Program on March 4, 2021 | Graduating December 2022

Principal Source of Financial Support: Full-Time Developer Position at College of Charleston

Academic Advisor: Dr. Dana Zhang

Courses and Grades			
Course Number	Course Name	Instructor	Grade
2021 Summer			
CS-5278-50	Principles of Software Engineering	Yu Sun	A+
CS-6381-50	Distributed Systems Principles	Aniruddha S Gokhale	A+
2021 Fall			
CS-5283-50	Computer Networks	Taylor T Johnson	A+
CS-5287-50	Principles of Cloud Computing	Aniruddha S Gokhale	A+
2022 Spring			
CS-5279-50	Software Engineering Project	Yu Sun	A
CS-6315-50	Automated Verification	Taylor T Johnson	A
2022 Summer			
CS-5262-50	Foundations of Machine Learning	Charreau Sieanna Bell, Jesse Spencer-Smith	A+
CS-6388-50	Model-Integrated Computing	Janos Sztipanovits, Tamas Kecskes	A+
2022 Fall			
CS-6387-50	Topics in Software Engineering: Security	Sam Hays, Christopher J White	In Progress
CS-8395-50	Special Topics: Quantum Computing	Charles Easttom	In Progress

Professional Goals & Achievements

Professional Goals

While I struggle to set specific career goals in stone on a landscape as kaleidoscopic and shifting as computer science, I know independently of that shifting that I want to solve problems and help people, and I want to do that in an environment that promotes creativity. Having spent a number of years working in network infrastructure with an encouraging team at College of Charleston that was always ready to explain and improve upon how things worked, I do have a special interest in computer networking - especially as it intersects with automation. I remember the thrill of getting to write my first script for automating firmware upgrades of Tripp Lite UPSes, and then later the excitement of learning how to use Ansible to manage bulk configuration changes across a network, and then later the hands-on fun of using that skill to configure a cluster of RHEL Icinga 2 satellite servers for a new network monitoring and alerting system. Watching what amounts to a series of gears click into place and function together to serve a collective purpose is a beautiful thing. That's why I carry a steadfast interest in understanding, designing, and building systems of moving parts, as was probably evident to Dr. Gokhale in my work for his Distributed Systems course, or perhaps to my parents in my childhood obsession with setting up and subsequently toppling mile-long chains of Dominoes, or crafting weird Rube Goldberg Machines. I aim to *integrate* this interest, if you will, into all of my professional pursuits moving forward, with the understanding that distributed systems can manifest in many forms.

Moreover, anyone who has worked with me longer than a month knows I'm an automation fanatic, and that will certainly be a defining factor in my professional trajectory. This enthusiasm was kickstarted when I was an undergraduate at College of Charleston and Dr. Jim Bowring tasked my classmates and I with building our own automated testing frameworks from scratch for existing open source software projects on GitHub. Over the course of this M.S. program, I got to dive into many automation-centric projects, some collaborative and some individual, that allowed me to really work on and improve my skills as an automator in the context of a deeper toolkit including tools like Ansible, Google Cloud Platform (GCP), Amazon Web Services (AWS), Vagrant by HashiCorp, Apache Kafka, and distributed datastores like Couchbase. Also, as part of my day job, I spend a significant amount of time discussing and identifying opportunities for automation with my teammates, and implementing automation solutions with scripting, API development, and the use of more codeless tools like Power Automate.

I feel confident that my full-time, fused IT role spanning networking, DevOps, and web development, combined with the past year and a half of engagement in Vanderbilt University's challenge-laden M.S. program, provides me with a unique perspective that I can wield moving forward as a technical professional in pursuit of opportunities to make positive, real-world impacts in collaborative and creative ways with a motivated team.

Academic Achievements During M.S. Program

Since starting the M.S. program in the summer of 2021, I have also held a full-time development job and have maintained a 4.0 GPA while taking two classes each semester. I've included a screenshot below of my Academic Record as of today, which excludes the classes that I'm currently taking (CS-6387 Topics in SWE: Security and CS-8395 Special Topics: Quantum Computing). This isn't the most exciting or sparkling achievement necessarily but nonetheless it is certainly a product of continuous hard work both academically and professionally.

I learned early as a high school student that the objective with school is **to learn and explore**, not to get good grades - good grades tend to be the natural byproduct of excitement and interest, sort of like how wave function collapse in quantum mechanics is the natural byproduct of environmental interaction (I just learned this in Dr. Easttom's Quantum Computing course). I say this to emphasize that my GPA has less to do with an obsession with my record than a real appetite for growing as a technical professional. With this appetite, and a supplemental unwillingness to put my name on things that I'm not proud of, I've made and I continue to make a consistent effort to produce high-quality and often over-the-top work both as a student and as an employee.

Attending remotely with a full-time job, I unfortunately did not engage in any research projects with faculty, nor in any CS-related campus clubs or activities, but I feel my lack of engagement in those areas has been counterbalanced by frequent eye-opening deep dives into unfamiliar CS topics like deep learning, formal verification with symbolic model checking, the design of metamodels with WebGME to craft domain-specific modeling languages (DSMLs), and much more. I've spent many a morning, afternoon, and night reading, writing, and coding as part of this program in pursuit of the idea conveyed by an admittedly overused Einstein quote: **"If you can't explain it simply then you don't understand it well enough."** This program has really pushed me to deconstruct things I do not understand into smaller and smaller components until I can explain the full idea, and thus has undoubtedly improved my ability to both speak and write simply about complex technical topics. Classes like Distributed Systems and Principles of Cloud Computing (both taught by Dr. Aniruddha Gokhale) posed challenges not only of **designing and building** things like distributed publish-subscribe systems and cloud-based data processing pipelines, but also of clearly demonstrating how those systems work. Just a few months ago, a topic like quantum computing seemed beyond cognitive reach and more like an abstract science fiction subject, but I have now written a full five-page paper analyzing a quantum-resistant, lattice-based digital signature scheme called CRYSTALS-Dilithium and have implemented Shor's prime factorization algorithm with Qiskit-based quantum programming as part of Dr. Easttom's Quantum Computing course. Similarly, prior to this program, I didn't have any experience with machine learning, and certainly could not have explained things like backpropagation, overfitting, or feature engineering, but as part of CS-5262, I have now worked hands-on with low-level training, validation and testing of machine learning models for things like employee churn prediction and image classification in Google Colab and have also acquired a bigger-picture grasp on the ML workflow and the determination of a given model's business value - or lack thereof.

As part of this program, I have also started creating and publishing computer science articles on both DEV and Medium; it has been my goal for a year or so to start engaging with and contributing to the developer community in this form. Professor Hays's course on security in software engineering, structured with many helpful assignments focused on open-ended questions around key cybersecurity topics,

Specific C.S. Interests

Full-Stack Web Development

Software Engineering

Cybersecurity

Distributed Systems

Cloud Computing

Curriculum Vitae (CV)

The CV should contain the following information: Academic degrees, professional employment, honors and awards, service, publications (if applicable), expert skills in computer science.

Academic Degrees

B.S. Computer Science from College of Charleston

📅 August 2015 - May 2019

As a College of Charleston student, I engaged in research with Dr. Ayman Hajja at the lively intersection of pedagogy and web development, I got to present that research on campus to multiple audiences of varying technical backgrounds, I competed with a fellow CS major in the 2019 Booz Allen Hamilton Hackathon, I competed in the National Cyber League cybersecurity competition, I developed a strong foundation as a computational thinker through a challenging C.S. curriculum, and I ultimately graduated summa cum laude with a cumulative GPA of 3.95/4.0 and a major GPA of 3.93/4.0.

Professional Employment

Honors & Awards

Service

Publications

Computer Science Expertise

Knowledge and Mastery of Computer Science Concepts

Knowledge and Mastery of Computer Science Concepts

Communication Skills in Computer Science

Conduct Independent Inquiry in Computer Science