

CALEB HERRERA

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EXPERIENCE

Capital One – Plano, TX

Feb 2025 – Present

Associate Software Engineer – Crypto Services

- Supported applications handling the distribution and inventory of TLS certificates across Capital One.
- Improved the horizontal scalability of application by implementing SNS fanout architecture using AWS SNS/SQS.
- Resolved customer-reported application issues by identifying root causes and implementing effective fixes.

Capital One – Plano, TX

Feb 2024 – Feb 2025

Associate Software Engineer – Dealer Risk

- Owned Java Spring Boot API handling dealership and auto loan information by interfacing with an oracle database.
- Led the migration of JavaScript web application to consume a new REST API in line with client requirements.
- Automated process for onboarding ~1000 dealerships using Python and Playwright.
- Supported team applications hosted on AWS using ECS, S3, and Lambda functions.
- Modernized legacy applications to comply with Java and Spring Boot regulatory standards.

Goldman Sachs – Dallas, TX

Jun 2022 – Aug 2022

Engineering Summer Analyst – Global Markets Tech Risk

- Automated daily reporting process, cutting down execution time from over an hour to less than three minutes.
- Developed a Tableau dashboard to dynamically reflect state, and metrics, of programs managed by team.
- Supported team operations by performing several data analysis tasks utilizing Python, SQL, and Alteryx Designer.

EDUCATION

The University of Texas at Austin

Master of Science in Computer Science

Aug 2025 – Present

Texas A&M University

Master of Computer Science

Jan 2025 – May 2025

Texas A&M University

Bachelor of Science in Computer Engineering
Minor: Mathematics

Aug 2019 – May 2023

CERTIFICATIONS

- AWS Solutions Architect Associate

Oct 2024

SKILLS

- Languages: Python, Go, Java, JavaScript, C++, SQL, HTML, CSS, C, Assembly
- Methodologies: Agile, Object-Oriented Programming, REST APIs, Cryptography, Machine Learning, Algorithms
- Platforms: AWS, GitHub, Jenkins, Jira, Maven, VS Code, MS Excel (Pivot Tables, VLOOKUP)

PROJECTS

Machine Learning Man in the Middle Intrusion Detection System -

Fall 2023

Independent

- Trained a K-means Clustering model to identify potential intruders on LAN using the Scikit-learn and Pandas Python library for data processing.
- Simulated server/client TCP connection traffic on a Virtual Machine network using Sockets and Threading.
- Collected training data using Scapy Python library to capture and interpret network packets.

Automated Spice Rack to Assist Motor Impaired Peoples -

Spring 2023

Collaborative

- Designed a system utilizing a Raspberry Pi running a Java based user interface, and an Arduino motor controller to manage stepper and servo motors for accurate spice distribution.
 - Worked in a team of four to pitch, design, and prototype a working product over the course of one semester.
 - Applied an Agile workflow model to divide greater tasks into deliverable sprints.
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ACTIVITIES

Texas A&M Cybersecurity Club – College Station, TX

Fall 2021

Member

- Engaged in weekly meetings covering topics in network/system defense, web exploitation, cryptography, etc.
- Attended presentations on Cybersecurity career opportunities given by industry speakers from a range of companies.
- Awarded a certificate of completion for the Red Hat Alliance System Administration I course for RHEL.

Texas A&M Howdy Hack – College Station, TX

Fall 2021

Competitor

- Competed in a 24-hour long competition hosted by Texas A&M University in a team of four students.
- Designed a student productivity app focused on time management, convenience, and integration with student portal.
- Developed a prototype using skills learned in competition including Figma and the Tkinter Python module.

LEADERSHIP

Solar Car Challenge – Fort Worth, TX

Summer 2019

Co-Team Leader/Competitor

- Headed a team of 16 high school students to compete in the national Solar Car Challenge at Texas Motor Speedway.
- Oversaw weekly meetings to engage students in testing and modifying the solar powered car for optimal performance.
- Placed 5th in the Advanced Classic Division after completing 234 laps, totaling 351.0 miles driven.

CERTIFICATIONS

- AWS Solutions Architect Associate
- CompTIA Security+ (in progress)
- Alteryx Designer Core
- Autodesk Inventor

ADDITIONAL INFORMATION

Interests: Cybersecurity, Data Analysis

Work Eligibility: Eligible to work in the U.S. with no restrictions

RELEVANT COURSEWORK

CSCE 483 Computer Systems Design -

Spring 2023

- Collaborated in a team of four to pitch, design, and prototype a working product over the course of one semester.
- Built an automated spice rack aimed at assisting persons with motor impairments in the kitchen.
- Designed a system utilizing a Raspberry Pi running a Java based user interface, and an Arduino motor controller to manage stepper and servo motors for accurate spice distribution.
- Applied an Agile workflow model to divide greater tasks into deliverable sprints.

CSCE 315 Programming Studio -

Spring 2022

- Completed multiple team projects throughout the semester focused on topics in software development.
- Designed a system for taking customers' orders using Java and a MySQL database in a scenario targeted towards local fast-food restaurants.
- Created a web application hosted using Heroku which utilized APIs to recommend movies to users based on their previous watch history and ratings.

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EDUCATION

Texas A&M University	Bachelor of Science in Computer Engineering Minor: Mathematics Overall GPA: 3.43	May 2023
Austin Community College	Associates of Science in Engineering	May 2022

LEADERSHIP

Solar Car Challenge – Fort Worth, TX Summer 2019

Co-Team Leader/Competitor

- Headed a team of 16 high school students to compete in the national Solar Car Challenge at Texas Motor Speedway
- Designed, built, and tested a solar powered car
- Placed 5th in the Advanced Classic Division after completing 234 laps, totaling 351.0 miles driven

ACTIVITIES

Texas A&M Cybersecurity Club – College Station, TX Fall 2021 - Present

Member

- Attended weekly meetings to learn about topics relevant to cybersecurity
- Completed the Red Hat Alliance System Administration I course

Texas A&M Howdy Hack – College Station, TX Fall 2021

Competitor

- Competed in a 24-hour long hacking competition alongside three other students
- Designed and prototyped a student productivity app using Figma and the Tkinter package in Python
- Presented final project to a panel of judges and received many positive reviews

RELEVANT COURSEWORK

CSCE 221 Data Structures and Algorithms - Fall 2021

- Analyzed a range of algorithms used for sorting and searching through data structures
- Studied various data structures including Trees, Priority Queues, and Hash Tables
- Implemented learned materials in a series of programming assignments based in C++

ECEN 350 Computer Architecture and Design - Fall 2021

- Studied hardware architecture and design methodology

CERTIFICATIONS

- Microsoft Office Suite
- Autodesk Inventor

SKILLS

- Proficient in C++
- Familiar with Windows and Linux
- Familiar with Python and ARMv8 Assembly
- Familiar with Verilog HDL and Multisim

ADDITIONAL INFORMATION

Interests: Cybersecurity, Data Analysis

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Relevant Coursework

CSCE 221 Data Structures and Algorithms -

Fall 2021

- Analyzed a range of algorithms for sorting and searching through data structures
- Studied various data structures including Trees, Priority Queues, and Hash Tables
- Implemented learned materials in a series of programming assignments based in C++

ECEN 350 Computer Architecture and Design -

Fall 2021

- Studied central processing unit organization, microprogramming, and memory system architectures
- Applied register transfer languages and simulation tools to describe and simulate computer operation
- Simulated a single cycle processor in final project using Verilog hardware description language and a Raspberry Pi

CSCE 315 Programming Studio -

Spring 2023

One semester to complete an individual project and two team projects to explore multiple areas of program design

- Studied central processing unit organization, microprogramming, and memory system architectures
- Applied register transfer languages and simulation tools to describe and simulate computer operation
- Simulated a single cycle processor in final project using Verilog hardware description language and a Raspberry Pi

CSCE 483 Computer Systems Design -

Spring 2023

Given one semester in a team of four to pitch, design, prototype, and test a working product fitting given constraints.

- Collaborated with three other computer engineering students to pitch, design, and prototype a working product over the course of one semester.
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- Applied an Agile workflow model to divide greater tasks into deliverable sprints.
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- Simulated a single cycle processor in final project using Verilog hardware description language and a Raspberry Pi

CSCE 452 Robotics and Spatial Intelligence -

Spring 2023

- Collaborated in a team of three to complete multiple projects simulating robot vision algorithms using the Robot Operating System (ROS) and Python
- Analyzed multiple algorithms
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CSCE 465 Computer & Network Security –

Fall 2022

- Studied concepts and principles in Operating System security, Network security, Web security, and Cryptography
- Designed exploits utilizing buffer overflow, SQL injection, ARP Cache poisoning, and SYN Flooding
- Leveraged virtual machines to simulate multiple computers on the same LAN for network vulnerability analysis

ECEN 424 Fundamentals of Networking –

Fall 2022

- Studied aspects of the OSI model including physical, data link, network, and transport layers
- Simulated a server that hosted up to 10 clients simultaneously over a TCP connection using Java and multithreading

CSCE 222 Discrete Mathematics -

Fall 2021

- Analyzed a range of algorithms used for sorting and searching through data

CSCE 221 Data Structures and Algorithms -

Fall 2021

- Analyzed a range of algorithms used for sorting and searching through data

ECEN 424 Fundamentals of Networking -

Fall 2022

- Studied layers of the OSI model from physical to application layer
- Simulated server/client communications over TCP/UDP using Java and multithreading.
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MATH 470 Cryptography I -

Fall 2022

- Mathematics behind coded communications, digital signatures, secret sharing, authentication, and data compression

- Implemented cryptographic systems such as Diffie-Helman, ElGamal, and RSA

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CSCE 465 Computer & Network Security-

Fall 2022

- Designed and tested multiple exploits using buffer overflow, SQL injection, ARP Cache poisoning, and SYN Flooding.
- Studied topics in Operating System security, Network security, Web security, and Cryptography
- Leveraged virtual machines to simulate multiple

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Frida's Tex-Mex Kitchen - Server; Austin, TX

July 2019 - December 2019, September 2020 - May 2021

- Managed up to six tables while maintaining professional demeanor as part of a dynamic services team
- Exhibited thorough knowledge of food and beverage menu and upsold to 75% of customers on a daily basis

ACADEMIC PROJECTS

OM 366P Operations Management Practicum - Client: Texas Instruments

Fall

2020

- Analyzed and validated reverse logistics processes, with practicum team, to ensure visibility of return inventory and costs
- Recommended changes to plant layout to improve efficiency of return process and cross-functional communication
- Identified potential cost savings of \$12K annually through new recycling program

HONORS

- Presidential Achievement Scholarship
- University Honors (4 semesters)

Fall 2018 - Present

Fall 2019 - Spring 2021

EXPERIENCE

IBM - Operations Intern; Austin, TX

June 2021 - Present

- Update six productivity reports regarding orders, shipments, revenues, and margins on a daily basis
- Reduce shipment down-time by 25%, allowing orders to increase by 30% for Southwest region
- Forecast inventory of computer hardware and process 50 client payments daily to ensure adequate supply

Paramount, Inc. - Accounting Intern; Los Angeles, CA

May 2020 - August

2020

- Tracked quarterly operating budget of approximately \$50K for costume department
- Prepared 25 detailed financial reports monthly in Excel for upper management to assess progress on goals

Frida's Tex-Mex Kitchen - Server; Austin, TX

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- Managed up to six tables while maintaining professional demeanor as part of a dynamic services team
- Exhibited thorough knowledge of food and beverage menu and upsold to 75% of customers on a daily basis