

Anthony Carthen

EDUCATION

Bachelor of Science, Electrical & Computer Engineering, North Carolina Agricultural & Technical State University (2020) - ABET Accredited

ELECTRICAL & TECHNICAL SKILLS

Revit | AutoCAD Inventor | AutoCAD 2D | FBD/Assembly/Ladder Logic | Cloud Computing/Security | AI/Machine Learning | Office 365 | Project Management | Full Stack Development O.O.P. | Programmable Logic Controllers PLC | SQL, NoSQL, Power BI | C++, JS5, JS2, CSS | .NET, restAPI, Angular, Next.js, Node.js | Computer Aided-Design (Most Platforms) | Python 3.11 | Scripting | Program Testing/Debugging | Automation | Technical Writing | Github | Network Security | Application Web Design | MAC, Windows, Linux OS | Continuous Learner | Power Systems Design | Electronic Transmission | Network Analysis | Power Systems | SPICE | PCB layout | Electronic Systems | Teamwork | Programming | Networking | Cloud Computing | Automation Development | Endpoint Security | Systems Delivery and Patching | Full Stack Dev. | Machine Learning AI/Neural Networks | Electrical Schematic Design | Databases (SQL) | HTML, CSS, JavaScript | Cloud-Based Workflow Automation (Amazon Web Services, Terraform) | Leadership | Computer Engineering | PowerShell | Data Science | ERP/EDR Tools | Circuit Design | Circuit Analysis | Power Distribution | Technical Writing

Skill Breakdown

Proficient in academic coursework related to electrical engineering, including principles of power systems, schematic design and telecommunications. Strong analytical skills with the ability to conduct assessments of power requirements and capacity planning. Detail-oriented with the capability to perform thorough evaluations of critical power equipment and troubleshoot issues effectively. Effective communicator and team player, able to collaborate with cross-functional teams to coordinate project activities. Adaptable and eager to stay up to date with industry trends, best practices, and regulatory requirements. Skilled in documentation management and providing technical support to team members as needed.

PROFESSIONAL EXPERIENCE

Allstate | Charlotte, NC | ATSV - Technology & Security Venture Graduate Program | 6/2021-8/29/2023

Networking Systems Delivery & Patching – Technology Consultant II | ATSV | (Full-time) 1/14/2023 - 8/29/2023

Served as lead network technician: patching processes, analyzed log files, and updated registry keys to ensure security compliance and system reliability.

Performed break/fix tasks on servers, packages, and other components, while minimizing downtime and maintaining high availability.

- Ensure operational standards were communicated across department by analyzing vulnerability scans in servers, determining machine health and criticality to mitigate risk. Monitor website traffic metrics such as page views, unique visitors, and session durations. Created cross-development scripts to run on Windows and Linux
- Deployed Microsoft patches to Windows Servers using SCCM and PowerShell for enhanced system security. Led efforts to create a dynamic script to minimize onboarding process and optimize network traffic. Created cross-platform to add members to a GPO. Performed regular inspections of network such as disabling TLS traffic for improved network security. RDP to Linux machines to investigate and resolve compromised network issues, performed network inspections using Wire Shark.
- Engaged in cross platform scripting tasks to automate repetitive tasks such as data entry, report generation, deploy software updates or configurations & develop monitoring scripts that collect system metrics, detect issues, and perform maintenance tasks across Windows, macOS, and Linux platforms.
- Collaborated with cross-functional teams in tutorials to assist with major enterprise incidents and build web applications, re-configuring the reporting tools pipeline, from cascading application servers, to feed directly to ServiceNow servers.

Networking & Endpoint Security - Network Engineer I ATSV | (Full-time)

6/14/2022 - 1/14/2023

Ensured the health and security of an extensive infrastructure by monitoring the vitals of 8,000 machines using advanced antivirus tools. Assist in hosting critical applications and sensitive data requiring high levels of control and security.

- Participated in capacity planning activities to prepare hybrid deployments, to meet regulatory compliance requirements, migration of workloads to on-prem.
- Proactively evaluated, troubleshoot, and escalated incidents related to application connectivity to minimize disruptions and swiftly resolve issues. Implemented robust security measures reducing unauthorized access incidents by 73%, using CrowdStrike, providing end-to-end email encryption.
- Performed essential security updates to workstations and machines, both Windows and Mac, safeguarding against vulnerabilities and enhancing system resilience. Performed regular inspections of firewalls, penetration tests for analysis of network ecosystem. Set up VLAN, designing and configuring the network infrastructure that supports containerized applications in Docker.
- Ensured compliance by verifying/implementing correct policies regarding back up locations and frequency across different systems, promoting adherence to industry standards and regulatory requirements enhancing the reputation of Allstate billing for being, during a hacking surge across Insurance Industry.
- Leveraged antivirus tools to generate early detections and assemble policies, strengthening the security posture of the organization and reducing the risk of cyber threats. Contributed to change management network documentation and updated records of configuration changes via SharePoint & Confluence.

Project Management – Project Manager | ATSV | (Full-time)

1/14/2022-6/14/2022

Supervised 3 migrations of server application. Participated in agile framework with standard daily stand-ups in two-week sprint iterations.

- Maintained mature application development practices using them as a model for developed work, reducing onboard-to-production time from new developers. Through supervisions, migration for major incident was resolved 1 month ahead of schedule, the organization did not have to spend money on re-platforming.
- Analyze content performance across reporting platforms and design automated business processes using SharePoint Designer. Manage web content, pages, and layouts using SharePoint's content management features. Connect SharePoint to external data sources such as Excel, SQL Server, or Power BI to visualize and analyze data.
- Work with developers to build React frameworks and RESTful APIs, mitigating problems with TLS from unvalidated data allowing developers more time to focus on building front-end applications with routing, data fetching, and other features.
- Ensured continuity of data by rigorously validating integrity across platforms, minimizing errors, and ensuring the availability of accurate information throughout the project lifecycle. Implementing least privileged access.

Intelligent Automation - Developer | ATSV | (Full-time)

6/14/2021-1/14/2022

Created workflows using Power BI for Blue Prism complementing the recertification of operational and process documentation, maintaining records.

- Performed development tasks for applications in Blue Prism to automate processes and enhance operational efficiency ensuring data integrity across platforms saving time on data analysis. Implement email parsing for hardware management regarding distribution of communications for security patches, application lifecycle etc.
- Assisted in the development of web applications using Python, Flask, and MySQL also participating in agile development process, daily standups, and retrospectives.
- User Power BI to transform raw insurance data into interactive dashboards including metrics like miles driven, location of policy to predicted insurance rate within the area for better price comparisons Conducted trend analysis using Power BI's time-series visualizations to identify patterns and fluctuations in claims data.
- Created interactive reports and dashboards to track and analyze claims overview, claim by type, claim status distribution, and geospatial analysis enabling management team to make informed decisions (also in Power BI). Use scripts developed in Python 3.11 scripts to perform data transformation and cleansing tasks, & data pipelining into Microsoft *PowerBI* for further analysis.

North Carolina A & T State Universities | Robotics Design Coach | (*part-time*)**8/14/2018-12/10/2020****Fellowship (30 students) over the course of a year who show high interest in computer and application development.**

- Lead teams through the development of functional specifications, requirements and detailed design specifications for hardware and software system solutions.
- Using functional block diagrams, iteratively honed the engineering design process to achieve standard operating requirements in everyday technologies.
- Designed, developed, and implemented application logic using Ladder Logic, transposing into Function Block Diagram.
- Work with students to program Allen-Bradley PLCs using assembly code to create calculators, interact with logic gates, build counters, etc. Engaged with students to understand ladder logic implementation and human-machine interfacing.
- Created 3D models of utilities, homes (Revit), devices, tools, screws and other industrial components for exposure to AutoCAD Inventor.
- Presented on use of AutoCAD introducing students to computer aided design, another wide-ranging application of programming. This presentation on creating controller, and mapping the signals & response were later used in a 3D model print for the Capstone project mentioned.

Whiting Turner | Site Manager | Washington DC— *Site Manager* | (*Full-time*)**4/2/ 2015 – 08/16/2016 (break: College)**

- Reviewed project design schematics with the design team and field staff, ensuring. Pre-construction meetings with the design team and homeowner.
- Coordinating jobs with subcontractors, vendors and production department, daily visits and phone calls with clients, scheduling pours, ordering correct concrete and documenting transactions. Undergo Apprentice level training with senior carpenters, mason tradesmen and engineers developing 3D printed layouts of projects.
- Prepared reports for foundation inspections of buildings. Inspected the building foundations for proper cement mix and rebar for pouring using excel. Documented safety violations; recorded on site accident prevention notes using MS office to create templates promoting uniformity.

Projects**Restoration of 1993 Honda Civic and Preservation of a Honda Ridgeline – Mechanic****4/27/2018 -present****A proactive approach to implementing technology, maintaining my versatile engineering skillset interacting and interfacing with ECU, TCU and electrical systems restoring to meet functional standards. Listed below are tasks completed during the summer of 2023.**

- Maintaining the electrical components of a 1993 Honda Civic is crucial for ensuring optimal performance and reliability. Replace the factory ECU with a programmable unit that allows you to control fuel delivery, ignition timing, and other engine parameters.
- Perform mechanical inspections of the electrical systems to identify signs of wear or damage. After replacing the fuel line, monitored engine parameters such as engine speed, throttle position, coolant temperature, and oxygen levels using megasquirt addressing EFI issues within 93 Civic.
- Using FlashPro Manager optimize the performance of Generation 1 Honda Ridgeline, to improve horsepower and enhance fuel efficiency, & fine-tuning other aspects of engine operation in restoration.
- Interface with Transmission control using I-HDS software to optimize shift schedules directly affecting fuel efficiency and consumption for travel across states.

University of the District of Columbia, Washington DC— *Electrical Engineering Project Advisor* | (*part-time*) 08/1/ 2022 – 04/10/2023**Advised students designing and implementing of RC Water Monitoring Bouy. Requirements: Develop a device that could monitor contents of water, take measurements of the quality and store the information to be accessed for future analysis.****Project Goal: Ensure limited contamination when fish farming, optimizing farms production.**

- Assisted in the modelling of 3D printed buoy using SolidWorks, an enclosed system that provided the space to specification, for the power supply, wiring, and motor providing mobility. Implemented electric schematic design into circuit assembly. Used Spice for mixed-signal simulation.
- Implemented PLC Logic controls applications using PyPLC to facilitate movement of buoy in water. Facilitated data & interfacing between embedded systems leveraging Pythons middleware and integration services also leveraging Pythons PyBluez to facilitate communication with Bluetooth dongle.
- Using a protocol stack facilitated functions of sensors: HTTP for cloud data collection, Modbus or CAN bus for controlling movement, and NMEA or RTCM for GPS communication.
- Assisted in mapping implementation of Cloud technologies to enable remote accessibility and testing; using AWS IoT Core to manage and collect data, implemented Lambda function to configure notifications, therefore enabling ability for processing information into AWS S3 buckets for reliable information storing and retrieval.
- Introduced students to spice up troubleshooting deliberation within their schematic design and circuit assembly.
- Analyzed and troubleshot system failures tested and implemented necessary changes for successful deployment on presentation day.

Technologies and tools leveraged:* PH sensor, total dissolved solids sensor, ammonia sensor, sonar sensor, and turbidity sensor (monitors clarity of water)*University of North Carolina Agricultural & Technical State University, Greensboro, NC— *Team Lead, Capstone Project* | (*Student*) 01/16/ 2019 – 12/10/2020****Capstone Project: Water crisis, I served as the team leader for liquid purity testing device leveraging ionization for fluids, that provided a unique signature for detection.****Requirements: Create an IoT device that could measure and store information digitally and display this information.**

- Using AutoCAD Inventor, created blueprint design and printed housing of ultrasonic probe, power supply, total dissolved solid sensor, IR sensor, and time of flight sensor, internal wiring and troubleshot system using Pythons PyPLC library. Using Python and mapped logic to Arduino controller. Conducted code reviews ensuring code quality and maintainability. Investigated power design solutions, creating logic, budgeting decisions, while also providing critical assistance to team members to meet deadlines effectively.
- Used Spice for circuit analysis before assembling, steady-state analysis to determine operating point to calculate parameters such as power dissipation and
- Implemented PLC Logic controller configuration using PyPLC to facilitate movement of RC on land. Facilitated data & interfacing between embedded systems using Pythons middleware and integration services. Leveraged Pythons PyBluez to facilitate communication with Bluetooth dongle.
- Interfaced Bluetooth signals to dongle using NRF24L01 RF transceiver module. Implemented Time-Division Multiplexing in python code for technologies to perform data collection, signal transmission and incorporate GPS sensor (also used Bluetooth), preventing signal distortion.
- Implemented MOSFET to facilitate power consumption between embedded systems, also playing crucial role in data storage and processing ionization being measured and compared. Performed circuit tests, determined power consumption and safety margins and to develop cases for improvement to implement into later technologies.
- Created timelines and delegated roles to team members for initial research. Took lead role in investigating solutions, creating logic, budgeting decisions, while also providing critical assistance to team members to meet deadlines effectively. Designed and implemented a data analysis dashboard using Python, Flask, and Chart.js.