

# Mauricio Aquino Curriculum Vitae

## **Personal Statement**

For me, the act of creating is what inspires me and drives me forward. I am inspired by new and innovative technology, creative ideas, wild inventions, new sounds, the vast reaches of space, and endless possibilities. Wonder excites me and pushes me to be curious, motivates me to learn something new, and fosters the desire to explore. There are many forms of media that inspired me to be the person I am and helped me through difficult times in my life. I love the idea of contributing to the communities that inspired me by giving back through those same mediums. Whether it be music, stories, software or games. I have the strong desire to pass on that sense of wonder, the desire to learn technology, the desire to dream, and wish to explore. I hope to inspire others and help others to feel represented. This is at the very core of who I am and is what lead to my desire to pursue a STEM career and how I ended up in the field of Cyber Security. Working on new, creative, and innovative projects is what excites me. This is something that will always be a part of me, and I will take with me to any company.

As a kid, I have always been obsessed with the concept of defense. I always sought to defend and protect whatever I created above all else. Whether it be in sports, video games, sandcastles, Legos, etc. Protecting proprietary data and confidential information is a serious issue for many companies and organizations across our nation. Unfortunately, in the realm of Cyber Security, there is no such thing as a perfect defense. Whether the world realizes it or not, the cyber world is the next battlefield. We live in a world, where cyber criminals are rarely prosecuted and where cybercrime is a growth industry. It is a constant battle to stay ahead of vulnerabilities and cyber-attacks. Many systems were built with functionality as opposed to security in mind which leaves new technology vulnerable to malicious action. This means that cyber security is important now more than ever.

The current cyber threat is why innovation is so important in the field of cyber security. We need new unique solutions to stay ahead of cyber threats. To continue to grow as a nation, it is important to continue to innovate and push forward new ideas. New ideas are what move us forward as a society and as humans collectively. Innovation allows us to find new solutions to existing problems; it is about transforming ideas into impact. Innovation is about taking what inspires us, what makes us unique, what drives us forward and turning that into something that makes an impact on the world around us and benefits the lives of others.

## **Education**

- UNIVERSITY OF COLORADO COLORADO SPRINGS, Colorado Springs, CO
  - Bachelors of Innovation in Computer Security, Expected May 2021
- PIKES PEAK COMMUNITY COLLEGE, Colorado Springs, CO
  - Associate of General Studies, December 2017
- COLORADO SPRINGS EARLY COLLEGES, Colorado Springs, CO
  - High School Endorsed Diploma, May 2017

## Work Experience

KING SOOPERS MARKETPLACE -- Colorado Springs, CO      Jul 2017 - Present  
Customer Service

Worked 3 years at King Soopers in Customer Service rotating through various positions within the Front-End department. Recognized for Customer Service skills and quickly moved from Courtesy Clerk to cashier. Currently working as Service Desk Clerk and backup Bookkeeper with introductory supervisor training.

- **Communication:** Strengthened and developed Communication Skills through experience in Customer Service as a Courtesy Clerk, Cashier, and Service Desk Clerk through a variety of customer interactions daily over the course of working these positions.
- **Money Services:** Experience with Money Services through position as a Service Desk Clerk. Knowledge of lottery including selling, maintaining, and operating Colorado Lottery equipment. Experience as an agent for multiple money service agencies including Western Union, RIA, and Kroger. Experience has provided knowledge of money service best practices, policies for money services in the grocery industry, and federal regulations regarding money services.
- **Accounting:** Basic Accounting knowledge and experience through Bookkeeper position. Experience with high stress intensive work environments. Responsible for inventorying and managing all tills for a marketplace store. Filed paperwork for money service transactions, and to track shortages within the store.

## Bachelor of Innovation Courses

- **ENTP 1000 Introduction to Entrepreneurship**
  - **Project:** American Sign Language (ASL) Language Learning App
  - **Scope:** Worked within a 4-person team to develop the concept and design for a prototype computer application that helps users learn American Sign Language through new innovative technologies.
  - **Outcomes:** Created a market facing presentation, performed research on existing patents, and researched technologies and methodologies that could be utilized for the application.
  - **Course Description:** Provides an introduction to the process of turning an idea into a successful startup business. Students learn to assess opportunities for venture/value creation, to address/identify risk in the startup process and develop presentation skills to convince others of the potential success to implement the business entity.
- **INOV 1010 The Innovation Process**
  - **Project:** Car Armor
  - **Scope:** Worked within a 4-person team to create the concept and design for a prototype product that would protect a user's car from superficial damage.
  - **Outcomes:** Designed a lightweight and affordable prototype that would save users money from rapid increase of hail damage within the local community.
  - **Course Description:** Overviews the key components in the innovation process and examples of major innovations throughout history. Includes group exercises

focused on improving team dynamics, brainstorming, conceptual-block busting and other creativity and problem-solving activities.

- BLAW 2010 Business & Intellectual Property Law
  - **Project:** Mock Patent for American Sign Language (ASL) Learning App
  - **Scope:** Worked within a team to develop a unique project concept and file out all government paperwork necessary to file an official patent.
  - **Outcomes:** Learned the process of filing patents. Filled out all necessary government documents for a patent and created a market facing presentation for our product.
  - **Course Description:** Examines the legal significance of ideas, innovations, and start-up organizations. Focuses on the issues of intellectual property, including patents, copyrights, and brand protection.
- INOV 2010 Innovation Team: Analyze and Report
  - **Project:** Champlain Tours Advertising and Marketing Team
  - **Client:** Champlain Tours
    - **Contact:** Keith Neil
    - **Phone:** (802) 540-0055
    - **Website:** <https://www.champlaintours.com>
  - **Scope:** Served as an Innovation Consultant in 5-person team for a tour company based in Vermont. Tasked with performing Search Engine Optimization for the client's website and social media. Tasked with redesigning the client's website, advertising and marketing strategies.
  - **Outcomes:** Improved our client's advertising and marketing for his company by enhancing the presentation of the client's website, providing research and strategies to improve our client's social media presence, and performing search engine optimization for his website. Additional work included redesigning his logo, creating travel brochures for various trips, and providing recommended advertising and marketing strategies in the capacity of innovation consultants.
  - **Course Description:** Sophomore level course emphasizing team projects, research, analyzing data, and reporting. Teams are expected to meet outside of class hours, possibly with sponsor companies. Meets concurrently with INOV 3010 and INOV 4010.
- INOV 2100 Technical Writing, Proposals, & Presentations
  - **Project:** NSF Government Grant Proposal
  - **Client:** The Cyber Resilience Institute
    - **Contact:** Doug DePeppe
    - **Email:** [doug.depeppe@cyberresilienceinstitute.org](mailto:doug.depeppe@cyberresilienceinstitute.org)
    - **Website:** <https://www.cyberresilienceinstitute.org/>
  - **Scope:** Worked in a two-person writing team on a government grant proposal to the National Science Foundation (NSF) for the Cyber Resilience Institute to allow them to expand their research and community outreach.
  - **Outcomes:** Created a portfolio of all documents and forms the client would need to submit proposal for grant through the NSF. Included all forms as well as guides for portions the client will need to verify and complete themselves when they file the grant proposal. Wrote and extensively edited government grant proposal according to the NSF's guidelines and requirements.

- **Course Description:** Addresses five major types of technical writing: project reports, funding proposals, magazine and trade articles, technical reports, and journal articles. Includes peer review and critical assessments of others' writings.
- INOV 3010 Innovation Team: Research and Execute
  - **Project:** Event Planning Team for Cyber Technical Conference/Speaking Panel
  - **Client:** The UCCS Innovation Program
    - **Contact:** Dr. Benjamin Kwitek
    - **Email:** [bkwitek@uccs.edu](mailto:bkwitek@uccs.edu)
    - **Website:** <https://innovation.uccs.edu/faculty/>
  - **Scope:** Served as an Innovation consultant in a 6-person event planning team that planned a cyber security speaking panel and technical conference to be held in partnership with the UCCS Innovation Program.
  - **Outcomes:** Researched and contacted potential speakers, venues, and caterers. Created an extensive budgeting document for our client to allow them to proceed with the planned event.
  - **Course Description:** Junior level continuation of the teams course sequence with advanced participation in team projects including research, design, and execution. Teams are expected to meet outside of class hours, possibly with sponsor companies.
- INOV 4010 Innovation Team: Design and Lead
  - **Project:** Medical Testing and Nutrition Tracking Mobile App
  - **Client:** Extravagant Wellness/ Longevity Wellness.
    - **Contact:** David Amess
    - **Email:** [damess@techwise.com](mailto:damess@techwise.com)
    - **Website:** <https://www.extravagantwellness.com/>
  - **Scope:** Lead a 6-person mobile app development team that designed and developed a prototype health and fitness mobile application for a wellness clinic.
  - **Outcomes:** Created a working prototype mobile application that will make the client's customers aware of their nutrient deficiencies, allow these customers to track and monitor nutrients through the food they eat, and help them make healthier choices and therefore improve their overall health. Work included project management, improving and implementing the technical designs created by the client's team, developing the frontend of the mobile application, and implementing the backend infrastructure the mobile application would need to function.
  - **Course Description:** Senior level continuation of the teams course sequence with emphasis on design and leading team projects. Teams are expected to meet outside of class hours, possibly with sponsor companies.
- ENTP 4500 Entrepreneurship and Strategy
  - **Project:** Mental Health and Safety Mobile App
  - **Client:** The UCCS Innovation Program
  - **Scope:** Created the concept of a mental health and safety mobile application that could be used as a resource for individuals struggling with mental health.
  - **Outcomes:** TBD
  - **Course Description:** Capstone course for the Bachelor of Innovation. Topics include understanding the entrepreneurial process, assessing opportunities,

selecting a start-up team, financing entrepreneurial ventures, writing and presenting business plans, and new venture and competitive strategy.

## **BI in Computer Security**

- CS 1150 Principles of Computer Science
  - **Description:** Transferred from PPCC
- CS 1450 Data Structures and Algorithms
  - **Description:** Transferred from PPCC
- CS 2060 Programming with C
  - **Description:** Transferred from PPCC
- CS 2080 Programming with UNIX
  - **Description:** Introduction to the UNIX operating system with an emphasis on the development of C and command shell programs.
- CS 2160 Computer Organization and Assembly Language
  - **Description:** Provides an introduction to the concepts of computer architecture, functional logic, design and computer arithmetic.
- CS 3050 Social and Ethical Implications of Computing
  - **Description:** This class will discuss selected topics in ethical, social, political, legal and economic aspects of the application of computers. Each student is expected to research one or more topics, actively participate in discussions, and give a presentation.
- CS 3060 Object-Oriented Programming Using C++
  - **Description:** The principal goals of this course are: 1) to learn the fundamentals of object-oriented programming, 2) to gain skill and proficiency in using the C++ programming language, 3) to exercise the C++ language in implementing a moderate sized software system designed with objects.
- CS 3300 Software Engineering
  - **Description:** Software engineering methodologies. The software lifecycle. Emphasis on the design, development and implementation of a software system. A course project provides the student teams practical application of the software engineering techniques.
  - **Notable Work/Project:** Worked in a team to create a homework tracking application using the Waterfall software development process. Created all necessary documentation for requirements phase, design phase, testing, and implementation. Developed presentations for each phase including high level diagrams. Implemented a working prototype application.
- CS 3910 System Administration and Security
  - **Description:** Covers the installation and configuration of mainstream operating systems, important network services, disaster recovery procedures, and techniques for ensuring the security of the system.
  - **Notable Work/Project:** Worked in a 4-person team to create a mock company and design the network infrastructure for the company utilizing virtual machines, wireframe diagrams, windows servers, domain controllers and Linux servers.
- CS 4200 Computer Architecture I

- **Description:** Fundamentals of computer design, instruction set principles and examples, pipelining, advanced pipelining and instruction-level parallelism, memory-hierarchy design and survey of design issues in storage, interconnection network and multiprocessor systems.
- **Notable Work/Project:** Worked with gem5 to create a fake system by emulating computer architecture and using that system to perform various tests on the simulated hardware.
- CS 4220 Computer Networks
  - **Description:** Focuses on the basic network and protocol concepts and principles with practical hands-on exercises on network management, network programming, and network planning through the use of industry simulators.
  - Notable Work/Project:** Developed programs for the TCP and UDP protocol that implement libraries to emulate how these protocols work using python code. Project demonstrated use of protocols by sending data back and forth and emulating a sender and receiver through separate programs.
- CS 4420 Database Systems I
  - **Description:** Introduces general database concepts as well as database system technology. The course covers ER and R data models, R-algebra, SQL, data storage and indexing, query optimization, database design and security.
  - **Notable Work/Project:** Worked within a four-person team to create a database utilizing Neo4j that analyzed correlations in guitar chords and the commonalities between fingers and frets used as well as individual notes. Hosted project on a website using Amazon Webs Services.
- CS 4500 Operating Systems I
  - **Description:** Introduces concepts, terminology, and algorithms of operating systems. Describes semaphores, processes, virtual mappings, interrupts, resource allocation and management, protection, synchronization, scheduling, queuing and communication as applied to operating system design and implementation.
  - **Notable Work/Project:** Developed C programs to utilize advanced operating systems concepts. Experimented with multithreaded application development.
- CS 4910 Intro to Computer Security
  - **Description:** Students will learn basic cryptography, user authentication, access control, malicious software, network attacks and protection, software security, and operating system security. Students will also perform hands-on security lab exercises.
  - **Notable Work/Project:** Created a functioning Secure Shell (SSH) Honeypot utilizing a Raspberry Pi, Ubuntu server OS, and honeypot software Cowrie. Installed, configured, and secured server operating system from the ground up. Work included creating false document to attract potential attackers, setting up and configuring honeypot to mimic an Ubuntu server system, testing infiltration of honeypot from attacker perspective, and analyzing logs from defender viewpoint. Also provided a written report, live demonstration, and video presentation for project. Implementing and testing a fully functioning Honeypot presented the opportunity to learn about a powerful and innovative cyber security technology and the ability to share that knowledge with others.
- CS 4920 Applied Cryptography

- **Description:** Basic security issues in computer communication, classical cryptographic algorithms, symmetric-key cryptography, public-key cryptography, authentication, and digital signatures.
- **Notable Work/Project:** Created a program to emulate the Advanced Encryption standard (AES). Program implemented every step outlined in the process of encoding and decoding data through this method.
- CS 4950 Homeland Security and Cyber Security
  - **Description:** Examines how homeland security safeguards the United States from domestic catastrophic destruction and investigates cyber security as a priority homeland security concern since a coordinated cyber-attack against critical infrastructure could produce the worst catastrophe in the nation's history.
  - **Notable Work/Project:** Wrote a research paper on the functionality and purpose of honeypots. Explained how they are useful in the field of cyber security and what value honeypots have to offer to networks.
- CS 3160 Concepts of Program Languages
  - **Description:** Evolution of the central concepts of programming languages, describing syntax and semantics, data types, abstract data types, control structures, subprograms, concurrency and exception handling.
  - **Notable Work/Project:** Created a daily schedule program prototype for employees that could be used by supervisors to track breaks, lunches, and shifts for each employee. Designed with experience gained through working at King Soopers. Coded within Python and utilized the Tkinter graphical interface library.
- CS 4720 Design & Analysis of Algorithms
  - **Description:** Design methodologies; divide-and-conquer, exhaustive search, dynamic programming. Time and space complexity measures, analysis of algorithms. Survey of important algorithms for searching, sorting, graph manipulation.
- CS 4940 Ethical Hacking
  - **Description:** Explores the methodologies surrounding ethical hacking and penetration testing. Students will learn various penetration testing techniques according to proven methodologies from NIST, NSA, and EC-Council. Students will learn and exercise reconnaissance, exploitation, analysis, and reporting methods.
  - **Notable Work/Project:** Planned out and filed all paperwork necessary to begin a mock penetration test on a company. Utilized course material and applied it to a preconstructed scenario.

## **BI Cross Discipline Communication Core**

- COMM 3440 Organizational Leadership
  - **Description:** An examination of contemporary theory and practice pertaining to leadership communication in organizations, including consideration of the nature of transformational leadership characteristics.
- VA 2150 Beginning Digital Photography
  - **Description:** Explores digital photography from the camera to the processes used for computer-based prints and digital media. Addresses historical, theoretical,

formal, conceptual, technical aspects of digital photo along with digital cameras and darkroom, and image output.

- MUS 2150 Electronic & Computer Music I
  - **Description:** Students will explore the history of computer music, including its development, methods, techniques, and applications. Students will then learn a variety of present day widely used software and complete a project of computer music creation which will result in a demonstration/performance.
- COMM 2010 Oral Comm in Workplace
  - **Description:** Designed to develop and enhance oral communication skills in business and professional settings. Course includes four components: a) basics of business communication, including emphasis on diversity; b) interpersonal skills, including listening and job interviewing; c) working in groups, including problem solving and effective meetings; and d) preparing and delivering effective business presentations.
- COMM 1020 Interpersonal Communication
  - **Description:** A lecture-discussion approach to communication theory and its applications in everyday communication. Intended to give students a point of view and certain basic knowledge that will help them become better communicators regardless of their fields of specialization.

## Skills and Competencies

- Excellent understanding and familiarity with object-oriented programming languages including C++, Java, and Python. Also, previous experience working with both C and Java.
- Introductory experience working with HTML, Java Script, CSS for website design.
- Experienced working with professional and academic teams remotely on Slack, Microsoft Teams, Discord, and Zoom.
- Prior experience with functional programming languages including Meta Language (ML) and cLisp.
- Strong familiarity with Microsoft Office Products including Word, Excel, Power Point, Outlook.
- Experienced with Project Management software including both Trello and Asana in a professional work environment.
- Mobile app development experience with dart/flutter. Including front end design and back-end infrastructure.
- Database project experience with Neo4j.
- Basic experience with Windows System administration with various versions of Windows Server.
- Strong understanding and familiarity with Linux systems. Familiar with Bash shell scripting, Linux file structure, and setting up, configuring, and securing Linux server systems.
- Familiarity and understanding working with Git version control software and its online repository GitHub.



- Strong background in Innovation and the design thinking process as well as transforming ideas into successful projects with Entrepreneurship through my degree program.
- Strong understanding of Honeypot technology and particularly experienced with SSH Honeypots.
- Experienced working with a variety of Virtual Machine technology including VMware, Oracle VirtualBox, UCCS EAS Architecture, Microsoft Hyper-V, and Multipass.
- Solid understanding of best security practices, cryptographic algorithms and ciphers, and two factor authentication.
- Prior experience with filing out government paperwork for patent filing.
- Experienced with government grant proposal writing and paperwork filing.

### **Community Involvement**

- Intern at Inside Out Youth Services
- Teacher's Assistant for Fountain Fort Carson School District 8

### **Awards and Recognitions**

- Completed the UCCS Lead Program
- Member of the National Society of Leadership and Success
- Member of the National Honor Society
- Inside Out Youth Services Scholarship
- 6 semesters of President's List (GPA > 3.5)