Alexander Mortillite

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EDUCATION

Stockton University · Galloway, New Jersey · GPA 3.4 **Graduated May 2025**

- Bachelor of Science in Computer Science
- Minor in Business Administration

Atlantic County Institute of Technology · GPA 3.6 **Graduated May 2021**

- Academy of Computer Science

ABOUT ME

My name is Alexander Mortillite, I've earned my Bachelor of Science in Computer Science from Stockton University. I'm passionate about finding solutions to difficult problems, then solving them through coding or hands-on engineering. After interning with the Federal Aviation Administration, I'm ready to put my education to use and deliver value as a Software Developer in a real-world environment.

SKILLS

- Proficient in Object-Oriented Languages; Including Java, Python, C++, C#, MATLAB and MS PowerApps.
- Experienced with Windows, Linux, Computer Networking, Containers, Virtual Machines, and VPNs.
- Practiced in SQL, HTML, CSS, Design Patterns, Dynamic web applications with Java EE, Git, and CMAKE.
- Soft skills in Communication, Leadership, Problem-solving, Creativity, and Team development.

WORK EXPERIENCE

Federal Aviation Administration (Gateways), AJM-2512, Computer Science Intern June 2024 – January 2025

Software Developer/Project Lead

- Developed Applications and Automations which facilitated high-speed, executive information exchange.
- Led meetings with stakeholders to establish feature expectations and provide real-time updates.
- Created and maintained clear, Evergreen Documentation, utilizable in further Application development.
- Streamlined Database Report Generations (DRGs) through Power Automate and SharePoint List.
- Practiced Full-Stack Development in a real-world software development environment.
- Used scripting languages like HTML and CSS to create automated, stylized PDFs.
- Utilized Microsoft PowerApps to create seamless integrations of databases into Microsoft Teams.
- Created and Managed multiple SharePoint Databases, supporting cross-functional communication.

Storybook Land Inc, Ride Operator April 2019 – December 2024

Ride Operator

- Conducted routine inspections and maintenance checks to ensure ride safety standards.
- Collaborated with maintenance teams to address technical issues and minimize downtime.
- Mentored and trained ride operators on best practices and safety protocols.

RELATED EXPERIENCE

FTC (First Tech Challenge) Robotics David Wood 4-H Center September 2015 – December 2020

Programmer/Project Lead

- Established libraries used in the production of autonomous/user-controlled robots.
- Conducted real-time testing/troubleshooting of robots within dynamic three-dimensional environments.
- Deployed critical software updates between competition rounds to address emerging issues.
- Taught junior team members fundamentals of Java/Android Studio.
- Communicated concurrently with build teams to prevent critical failures before they happened.
- In tandem with building teams, tested and evaluated different variations of tracked vs wheeled motion.

PROJECTS

Barnes-Hut Simulation (Summer 2025) [C++] Barnes-Hut C++ GitHub

- Implemented an optimized Barnes-Hut Simulation in C++, reducing calculation from (n^2) to (n log n).
- Developed a real-time 2D physics engine using Raylib to simulate orbital mechanics.
- Designed an integral, C++ quadtree implementation, which recursively subdivides and partitions world space.
- Integrated user-driven event handling with via velocity impulses, camera functionality and planet spawning.
- Avoided backpropagation overhead by tagging planets with their containing quadtree node pointer.
- Built runtime telemetry tools to monitor planet properties, dynamically rendering screen-space overlays that follow planetary motion.

Laser Reflection Simulation (Summer 2025) [C++] Laser Simulation GitHub

- Built a ray-optics simulator in C++ which models reflection using the formula r = i-2(i*n) n
- Applied geometric collision to compute reflections across ring normals with high accuracy.
- Engineered several solutions for simulation state management, including placing rings in real time, path visualization and dynamic laser speed increments.

Quadtree Division System (Spring - Summer 2025) [Python] Quadtree GitHub Repository

- Engineered a reusable library for easy use of a Quadtree within a two-dimensional plane.
- Enabled efficient partitioning of positions within a traditional coordinate plane.
- Implemented JIT-compiling using Numba to accelerate Python's execution speed.
- Used PyInstrument to profile execution hotspots and guide Numba JIT optimizations.

Advanced-Solar-Sim [Personal Project] (Winter 2024) Advanced-Solar-Sim Project GitHub

- Applied Physics and Programming to simulate planetary motion in a 2D environment using LibGDX.
- Designed thrust vectoring with trigonometry and geometry to achieve dynamic directional thrust.
- Optimized a trajectory projection implementation, allowing the user to see when planets will collide.

Knowledge Discovery and Data Mining Course Project [Project Lead] [College Project] (Fall 2023) GitHub

- Cleaned and refactored large datasets stored in .csv files into readable formats for analysis using Python.
- Devised algorithms to extract insights and find correlations in complex survey data from multiple states.
- Took on the roles of team leader among my group, demonstrating leadership, planning and collaboration.
- Uncovered potential real-world correlations between Alzheimer's and lifestyle factors.

Jakarta EE Dynamic Web Application Parabolic Graphing Tool [Independent Study] (Spring 2023) Jakarta GitHub

- Implemented Model-View-Controller architecture following proper design patterns structure for scalable and maintainable code.
- Demonstrated working knowledge of both dynamic web applications and Tomcat servers.
- Displayed proficiency in full-stack web development using both front-end and back-end technologies.
- Gained hands-on experience with enterprise Java standards and web application architecture.

CERTIFICATIONS

MTA: Networking Fundamentals – Certified 2021
MTA: Windows Operating System Fundamentals - Certified 2019
IC3: Digital Literacy – Certified 2018

References

Chris Carboy · AJM-25 Software Development Manager · Contact: 609-485-8288
Derek Kubont · AJM-2512 Specialty Engineering Manager · Contact: 609-233-3600
Kevin Tracy · AJM-25 Security Team Lead · Contact: Kevin.R.Tracy@faa.gov