

Aspen Johnson

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EDUCATION

Valdosta State University

B.S in Data Science: Computational Sci. & Eng. Track, Minors in Physics and Math

Expected: 2028, GPA: N/A

Palm Beach State College | Academic transition year

A.A in STEM: Mechanical/ Aerospace Engineering Track

Aug 2025 - May 2026, GPA: 3.2

Mercer University

Coursework in Finance, Mathematics, and Economics

June 2022 - May 2025, GPA: 3.0

PUBLICATIONS

[An empirical application of improved gradient scaling for score-driven volatility filters](#)

Mercer University

- Selected as 1 of 15 research papers to present a lecture at the 2026 Atlanta Research Conference.

RESEARCH EXPERIENCE

Research Assistant | Long-Memory Time Series & Seismicity Modelling

June 2026 – Present

Faculty Guided Research w/ Prof. Szabolcs Blaszek

Remote

- Studied long-memory dynamics, persistence, and fractional integration as tools for analyzing complex real-world systems in Alaska and California.
- Explored public earthquake datasets from sources such as USGS and NOAA to evaluate how seismic activity can be transformed into interpretable time-series variables.
- Analyzed over 50 years of earthquake data, totaling more than 2 million data points, collected through a custom Python web-scraping script using USGS database queries.

Computational Physics Researcher | Atomic Particle Simulation & Modeling

April 2026 – Present

Faculty Guided Research w/ Prof. Shafat Mubin

On-Site/Remote

- Studied the Velocity Autocorrelation Function (VACF) to analyze how particle velocities evolve over time in molecular dynamics trajectories.
- Investigated how velocity data can be modeled using Gaussian distributions to better understand equilibrium behavior in simulated systems.
- Developed foundational knowledge in molecular dynamics, time-series behavior, and simulation-based scientific computing.

Financial Econometrics Researcher | Score-driven Volatility Filters

Jan 2025 – Dec 2025

Faculty Guided Research w/ Prof. Szabolcs Blaszek and Adam Kobor

On-Site/Remote

- Contributed to work showing that Hessian-driven gradient scaling can improve volatility-filter performance relative to existing scaling methods.
- Gained publication experience through faculty-guided research involving model interpretation, literature review, empirical analysis, and manuscript development.
- Analyzed financial time-series data across Bitcoin, S&P 500, Gold, U.S. REITs, and CHF/JPY from 2010–2025 using R, GAUSS, Excel, and Bloomberg Terminal data.

Financial Analyst Intern

May 2025 – Dec 2025

Zinzino USA

Remote

- Reduced chargeback processing time by 87% through workflow digitization and documentation streamlining.
- Refined the charge back process within a few weeks of arrival, and curated a reference guide to aid future onboarding employees.
- Created clear documentation that enabled cross-departmental collaboration and made Finance operations easy for shareholders and upline leaders to understand.

LEADERSHIP, ATHLETICS, AND SERVICE

Collegiate Women's Basketball Player

June 2022 – Present

Mercer University | Valdosta State University

NCAA Division I | Division II

- Commit 20–25+ hours per week to practices, strength training, film study, travel, competition, recovery, and team responsibilities while balancing full-time academic and research commitments.
- Develop leadership, discipline, time management, communication, resilience, and performance under pressure through year-round collegiate athletics.
- Represent university athletic programs in competitive, team-based environments requiring accountability, preparation, adaptability, and consistent execution.

PROJECTS

CC-Me-Planner | *Platform to simplify the community college academic advising process* **(In Progress)**

- Developing a full-stack academic planning web application designed to simplify semester, AA, and bachelor's degree scheduling for community college students in South Florida.
- Designing with accessibility at the forefront, addressing barriers faced by returning adults, first-generation students, and transfer-track students.

CourtSignal | *Assistive Technology for Hearing Impaired Athletes* **(In Progress)**

- Developing an assistive technology concept designed to improve real-time communication access for deaf and hard-of-hearing athletes in competitive sports environments.
- Selected for the University System of Georgia and Georgia Tech's inaugural 2026 Startup Studio seminar to advance the project through entrepreneurship training, customer discovery, and early-stage product validation.
- Researching communication barriers faced by athletes with hearing loss, including coach instruction, teammate coordination, and environmental awareness during practices and games.
- Exploring software-based design approaches that prioritize accessibility, mobility, and practical use within high-performance athletic settings.

LEADERSHIP, COMMUNITY ENGAGEMENT & EXTRACURRICULARS

Read2Succeed | *Tutoring elementary students to aid in building literacy in Macon, Georgia*

Putnam Mathematics Competition Prep | *Independent Study*

Youth Sports Volunteer | *Assisted young athletes K-12 in a variety of sports.*

Weekly Physics Study Group Member | *Going through **Helliwell's Modern Classical Mechanics** text*

Book Club Fellow | *Selected as one of ten students to participate through Mercer Universities Economics Department*

Content Creation | *Streamed myself doing psets and projects on youtube amassing ~20,000 views*

AWS Campus Prep Series Participant | *Completed a Summer-long series of webinars regarding Amazon Careers and Cloud Services*

TECHNICAL SKILLS

Languages in order of proficiency: Python, Java, LaTeX, HTML/CSS, R, Gauss, C/C++, JavaScript, Octave, TypeScript, JavaScript

Developer Tools: Git, CLI, VSCode

OTHER

Clubs/Organizations: NSBE, SWE, and Codecademy's Women in Tech

Relevant Coursework: Calculus I-III, Linear Algebra, Differential Equations (ODE), Probability and Statistics, Data Structures, Programming, Intro Econometrics, Time Series Analysis in R, Physics I