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: 2027, GPA: N/A*

Palm Beach State College
A.A in STEM: Mechanical/ Aerospace Engineering Track — *Expected: Summer 2026, GPA: 3.5*

Publications

An empirical application of improved gradient scaling for score-driven volatility filters

- *Applied Economics Letters*, Taylor & Francis (2025) | Co-authored with **Szabolcs Blazsek** (Mercer University) and **Adam Kobor** (New York University Investment Office).
- Contributed to conceptualization, data curation, formal analysis, methodology, software implementation, validation, visualization, and manuscript preparation for empirical testing of the Hessian-filter scaled Beta-t-EGARCH volatility model across Bitcoin, S&P 500, Gold, U.S. REITs, and CHF/JPY over the period 2010–2025.

Experience

Econometrics Researcher — Jan 2025 – Dec 2025
Mercer University — *On-Site/Remote*

- Sourced and structured financial data from the Bloomberg Terminal, computing return series and descriptive statistics across candidate assets in Excel and R.
- Benchmarked 6+ volatility models (gjrGARCH, sGARCH, Beta-t-EGARCH) in R and GAUSS, selecting optimal asset universe based on data sufficiency and model fit.
- Debugged compilation errors across R and GAUSS environments, documenting terminal logs with line-level annotations for weekly faculty review.
- Co-authored peer-reviewed manuscript in LaTeX published in *Applied Economics Letters* (Taylor & Francis, 2025).

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.

Projects

CC-Me-Planner — (In Progress) | *HTML, CSS, JavaScript, SortableJS, JSON*

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

Physics Practice Platform — (In Progress) | *HTML, CSS, JavaScript, Python, NumPy, Matplotlib, ManimCE, ManimGL, FastAPI*

- Building a comprehensive physics research and learning platform designed to serve undergraduate and graduate physics education.
- Conducting active community-driven user research by engaging physics, mathematics, and computer science student communities across Reddit, Discord, and academic forums.
- Integrating ManimCE and ManimGL animation engines to render programmatic, publication-quality simulations of classical mechanics, electromagnetism, and quantum systems.

Name TBD — Personal Study Dashboard — (In Progress) | *HTML, CSS, JavaScript, Python, FastAPI, REST APIs*

- Building a personal productivity and study dashboard integrating third-party APIs from tools utilized daily.
- Implementing a Pomodoro focus timer with session logging and tags to track daily, weekly, monthly, and annual time allocation separated by subject.
- Designing a digital habit and goal tracking module with persistent state management to log and visualize positive academic habits over time.

- Integrating APIs including Google Calendar, GitHub REST API, YouTube Music (ytmusicapi), Zotero (pyzotero), and Canvas LMS.

Polarity Predictor Tool | *HTML, CSS, JavaScript, YAML, Git*

- Designed and developed a chemistry quiz application in HTML, CSS, and vanilla JavaScript to reinforce undergraduate Chemistry II concepts in molecular bond polarity and intermolecular forces.
- Architected a modular, multi-file application across 5 independent question modules, 5 corresponding HTML question pages, and a dedicated JS results engine.
- Implemented dynamic input handling and response logic in vanilla JavaScript, routing user answers across interconnected question modules and surfacing personalized results on the final page.
- Created hand-drawn molecular imagery and partial charge assets to build a visually grounded learning interface.

Leadership, Community Engagement & Extracurriculars

Read2Succeed | *Tutoring young students at the local elementary schools to aid in building literary confidence*

Division 2 Women's College Basketball Player | *Valdosta State University*

Youth Sports Volunteer | *Assisted young athletes K-12 in a variety of sports to gain skill and*

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*

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
Developer Tools: Git, CLI, VSCode

Other

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