

Hayan Saab

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Summary

Computer Science major at Whitman College (minors in Data Science and Finance) with experience in student organization leadership, program design, applied machine learning research, and campus IT support. Founder of the Whitman Innovation Lab, an industry-facing accelerator program for computer science students, and President of the ACM Student Chapter. Research experience in fraud detection and algorithmic fairness. Long-term goal is to found a technology company, lead engineering teams, and retain deep technical ownership of the products built.

Education

Whitman College, Walla Walla, WA Bachelor of Arts in Computer Science, Class of 2028 (Junior) Minors: Data Science, Finance

- Relevant coursework: Algorithms (CS 327: maximum flow, NP-completeness, randomized algorithms, dynamic programming), Statistics (Math 247, in progress, using R and RMarkdown)
- Finance Accelerator participant, Career, Community and Engagement Center (CCEC)

United World College (UWC) International Baccalaureate (IB) Diploma

- Completed secondary education in an international, residential, service-oriented setting

Leadership Experience

Founder and Program Lead, Whitman Innovation Lab (WIL) Whitman College | April 2026 to present

- Founded and designed a semester-long accelerator program that bridges theoretical computer science instruction and industry practice. Students join mentor-guided teams to design, build, and ship a prototype that addresses a real problem proposed by an alumni mentor, in fields including AI, cybersecurity, fintech, and healthtech.

- Designed the 2026-2027 curriculum and schedule: lectures and workshops on version control, design and integration, and agentic coding and automation, combined with hands-on labs, weekly presentations, and structured milestones. Restructured unit dependencies and evaluated frontend course options (React), including whether frontend content should be mandatory.
- Defined the program structure: a cohort of 24 students, three alumni mentors each overseeing two teams, three supervisors (CCEC staff, a student leader, and CS faculty), and a four-month program across two semesters. The stronger team per mentor travels to San Francisco in January for a three-night career trek to pitch to engineers, founders, and product managers.
- Wrote the grading policy (attendance and participation 10%, group presentations 10%, GitHub commits 30%, pre-class work 5%, post-class tasks 5%, group project 40%), the attendance requirement for trek eligibility, and an AI-use policy requiring students to understand and explain their own code and design decisions.
- Authored the Student Guide for 2026-2027 and the mentor-facing selection rubric used to choose which team attends the career trek, and produced recruitment and program documentation with the ACM board.
- Built the program budget proposal with High, Low, and Pilot funding scenarios, category subtotals, and an assumptions tab to support funding discussions.
- Defined three volunteer tracks for alumni and industry professionals (mock interview support, semester-long team lead, and industry visit host) and organized a mock interview session for students on October 14, 2026.
- Serve as the main point of contact among mentors, faculty, and CCEC staff.

Industry Partner and Mentor Sourcing, Whitman Innovation Lab April 2026 to present

- Compiled a target list of Silicon Valley and Bay Area companies with substantial in-house engineering, spanning startups, large technology firms, and non-technology companies with strong internal engineering departments.
- Cross-referenced the company list against a Whitman alumni list to identify collaboration targets, then built an outreach tracker of roughly 47 individual contacts across companies including Apple, Google, Meta, Nvidia, Amazon, Cisco, Salesforce, Netflix, PayPal, Uber, Airbnb, DoorDash, OpenAI, and Anthropic, as well as several startups.
- Co-lead mentor outreach with a fellow organizer and work with alumni connectors to secure introductions to prospective mentors, tracking communication status for each contact.

President, ACM Student Chapter Whitman College | July 2025 to present

- Lead the chapter's executive board and set the direction of its programming for computer science students.
- Manage operations: schedule rooms through Coursedog, order food for sessions, submit and manage budget requests, and administer the chapter's Google Group and email list.
- Coordinate with faculty, CCEC, and alumni to launch the Whitman Innovation Lab as a chapter-sponsored initiative.

Organizer, Hackathon with the CCSC-NW Regional Computer Science Conference Whitman College | 2026 to present

- Organizing a hackathon held in conjunction with the Consortium for Computing Sciences in Colleges Northwest (CCSC-NW) regional conference hosted at Whitman.
- Conducting outreach to technology companies and startup founders to explore collaboration, including having a company present a real-world problem for participants to solve.

Research Experience

Student Researcher, Fraud Detection and Algorithmic Fairness Whitman College, Department of Computer Science | Summer 2026 Advisor: Richard Torres Molina, Visiting Instructor of Computer Science

- Built a stacked ensemble classifier for credit card fraud detection on the synthetic Sparkov transaction dataset, studying random forests, XGBoost, and neural network models.
- Implemented data preprocessing and feature engineering pipelines in Python (pandas, NumPy, scikit-learn) using Jupyter notebooks, including skewness analysis and log transformation of skewed features such as city population.
- Evaluated models on precision, recall, and precision-recall curves, which are appropriate for the heavy class imbalance typical of fraud data.
- Audited model fairness across cardholder groups using statistical parity, equalized odds, and equal opportunity.
- Conducted a systematic literature review of machine learning fraud detection and algorithmic fairness, including work by Kozodoi et al. (2022), Kamalaruban et al. (2024), and Hardt et al. (2016), and the Bank Account Fraud (BAF) dataset suite. Reviewed several candidate datasets before selecting Sparkov.

- Drafted the methods sections of a technical paper covering fraud injection parameter calibration, preprocessing pipelines, and skewness analysis, and produced a closing research statement for Whitman College.
- Completed self-directed study of pandas, NumPy, and regular expressions in support of the research, and read The Craft of Research as preparation in research methods.

Professional Experience

IT Consultant, Whitman Technology Services (WCTS) Whitman College | September 2024 to present

- Provide technical support to students, faculty, and staff, working approximately 15 hours per week alongside a full course load.
- Manage and resolve requests through the ticketing system, including client support and basic troubleshooting.
- Administer Duo multi-factor authentication for users and support Microsoft Office applications.
- Trained in email list management.

Content Creator, Whitman Digital Fluencies Whitman College | October 2024 to May 2026

- Designed social media posts, video visuals, flyers, and posters using Canva, Adobe Photoshop, and Adobe Illustrator.
- Wrote articles for the Digital Fluencies program, including pieces on Apple Notes features and on the relationship between AI and humans.

Consultant, Whitman Finance Accelerator (WFA) CCEC, Whitman College | September 2025 to March 2026

- Led a consulting project on embedding AI in healthcare, analyzing costs, benefits, and broader organizational and patient impacts to produce a holistic assessment.

Technical Skills

Languages: Python (pandas, NumPy, scikit-learn), C++ (foundational), R and RMarkdown (coursework), regular expressions

Machine Learning and Data: Ensemble methods (random forests, XGBoost, stacking), neural networks, feature engineering, model evaluation (precision, recall, precision-recall curves), fairness auditing, Jupyter notebooks

Computer Science Foundations: Data structures and algorithms, max flow, dynamic programming, NP-completeness, randomized algorithms, Git and GitHub, version control workflows

Tools and Platforms: Google Workspace, Microsoft 365, Notion, Excel and Google Sheets, Duo, Coursera, Canva, Adobe Photoshop, Adobe Illustrator

AI-Assisted Development: Agentic coding workflows with Claude Code and related tools; evaluation of AI coding tools for team use

Projects

Fraud Detection Research Project (see Research Experience above)

- Independent and collaborative research project on ensemble models for fraud detection and fairness across cardholder groups.

AI-Assisted Application Projects Whitman Carpool, pomodoro timer, budgeting system, and course analytics dashboard

- Built using AI-assisted ("vibe coding") workflows to explore product ideas and rapid prototyping. These projects informed my current self-directed plan to strengthen independent implementation skills.

Self-Directed Software Engineering Roadmap

- Designed a two-year skills roadmap in Notion weighted 80% software engineering fundamentals, 15% cloud, and 5% security, with the milestone of one independently built, deployed project per semester.
- Practice a daily two-hour coding routine focused on data structures and algorithms for technical interviews, system design, and the ability to debug AI-generated code.

Writing and Communication

- Authored program documents including an executive summary, student guide, mentor rubric, and volunteer track descriptions for the Whitman Innovation Lab.
- Wrote articles for Whitman Digital Fluencies and produced visual content for campus audiences.

- Wrote a closing research statement and technical paper sections for the fraud detection project.
- Attended the Whitman Power and Privilege Symposium (2026), engaging with talks on immigration, displacement, and discrimination.

Background and Interests

- Born and raised in Syria, with formative years in Hong Kong, followed by an IB Diploma at a United World College. This multicultural background informs my interest in global affairs and my approach to collaboration across cultures.
- Intellectual interests: mathematics, computer science, finance, economics, astronomy, literature, and politics.
- Personal interests: guitar, basketball, gym training, photography, camping, travel, and storytelling through writing and video.

References

Richard Torres Molina, Visiting Instructor of Computer Science, Whitman College (torresmr@whitman.edu). Additional references available on request.