Mauricio S. Callahan

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Education

Miami University May 2027
Bachelor of Arts in Computer Science, Minor in Finance *Oxford, OH*

Experience

Software Engineering Intern June 2026 – August 2026
JPMorgan Chase *Columbus, OH*

- Built a bulk ACH cancellation API in Spring Boot, replacing per call with batches (typically 20 to 30 transactions)
- Reduced required inputs from 4 per transaction to 2 per batch by resolving IDs from client reference numbers
- Verified the cancellation API with 30+ JUnit tests in Jenkins, Bruno validation and senior engineer code review
- Created an agent skill that translates plain English requests into Splunk queries through an internal MCP server

Peer Career Coach August 2025 – Present
Miami University, Center for Career Exploration and Success *Oxford, OH*

- Conduct 1:1 resume reviews and mock interviews, and provide career guidance to students
- Facilitate workshops and deliver 3+ presentations per semester on professional and career readiness
- Collaborate with student workers and career staff to improve coaching strategies and interview prep resources

Technical Skills

Languages: Java, Python, TypeScript, JavaScript, SQL
Frameworks & Libraries: Spring Boot, Next.js, Flask, React
Databases: PostgreSQL, MySQL, Supabase
Cloud & DevOps: AWS, Docker, Jenkins, Linux
Developer Tools: REST APIs, Bruno, CI/CD, Git, GitHub, Bitbucket, Jira, Maven, Splunk
AI Tools: GitHub Copilot, MCP, Claude Code, Codex

Projects

FIRE! Budgeting App | *Java, Spring Boot, Supabase, PostgreSQL, Docker* In Progress

- Designed a PostgreSQL ledger with triggers and ordered row locks that keep totals accurate under concurrency
- Secured user data with row level security and column level permissions, verified by 34 SQL permission checks
- Implemented a stateless Spring Boot backend validating Supabase tokens, covered by 30 JUnit assertions

Riven Market Pricing Tool | *Python, Flask, React, TypeScript* March 2026

- Developed a price estimator for player traded items across 4 platforms from live auction data
- Engineered a 6 stage pricing engine using cosine similarity, archetype matching, and IQR outlier removal
- Filtered fake listings with a bid validator that sets 3 confidence tiers from bidder reputation, timing, and jumps
- Kept a React and TypeScript search UI responsive under a 3 requests/sec API limit with a shared rate limiter

Pose Detection | *Python, PyTorch, NumPy* May 2026

- Trained a custom CNN and modified ResNet18 with a 4 person team to predict 17 body joints from radar data
- Preprocessed MMVR radar data by normalizing inputs and generating Gaussian target heatmaps for training
- Compared ResNet18 against a custom CNN across 6 metrics, raising PCK@5% from 0.117 to 0.931

Leadership

President April 2025 – May 2026
Society of Hispanic Professional Engineers (SHPE) *Oxford, OH*

- Liaised between the student chapter, National SHPE, and Miami University's engineering department
- Coordinated local events to promote academic excellence and increase engagement for undergraduate STEM
- Doubled chapter membership (9 to 20) via 10+ corporate events, including Essity and Avery Dennison