Melanie Basso

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PROFESSIONAL SUMMARY

Software Engineer with 9+ years of experience developing, testing, automating, and validating complex software systems across healthcare, aerospace, and enterprise environments. Strong background in Python, C#, TypeScript, SQL, REST API design, test automation frameworks, and containerized systems. Experienced in full-stack development spanning React/TypeScript frontends, ASP.NET Core backends, Flutter mobile apps, and Python data pipelines. Skilled in AI-assisted development workflows using Claude, Copilot, and prompt engineering.

CORE TECHNICAL SKILLS

Languages: Python, C#/.NET, JavaScript, TypeScript, SQL (MSSQL, PostgreSQL, SQLite), Dart/Flutter, Bash, VBA
Frontend & Mobile: React, Vite, Tailwind CSS, Flutter
Backend & Data: ASP.NET Core, Entity Framework Core, REST APIs, SQLAlchemy, Pandas, Streamlit, PostgreSQL
Testing & Automation: Playwright, SpecFlow, Gherkin/BDD, PyTest, Vitest, Flutter Widget Tests, Swagger, Regression, Unit Testing
Tools & Platforms: Docker, GitHub Actions, Jira, Visual Studio, VS Code, CloneZilla
AI Integration: Anthropic Claude API, Prompt Engineering, AI-Assisted Development
Domain Knowledge: Healthcare Billing & Claims, Revenue Cycle Management, Data Integrity, HL7, EDI

PROFESSIONAL EXPERIENCE

Pratt & Whitney — Software Engineer (Quality, Automation & Systems) | Jan 2024 – Present | Jupiter, FL

- Modernized legacy Bash-based automation by designing and implementing a scalable Python/PyTest framework.
- Expanded automated and manual test coverage from 117 to 600+ cases across mission-critical systems.
- Designed and automated system imaging and provisioning workflows, reducing setup time from 4+ hours to under 30 minutes.
- Built SQL-based validation tools to verify data integrity and system behavior.
- Authored onboarding documentation and engineering standards, reducing new-hire ramp-up from 12 months to 90 days.

Net Health — Software Engineer (Quality & Automation) | Aug 2016 – Jan 2024 | Remote

- Served as Subject Matter Expert across multiple products supporting healthcare billing, claims, and clinical workflows.
- Developed automation using C#, SpecFlow, and Gherkin; created reusable test components and step libraries.
- Performed advanced SQL-driven backend validation, defect analysis, and data correction.
- Executed REST API testing using Swagger and validated distributed microservices in Docker-based environments.
- Mentored junior engineers on test design, debugging, SQL analysis, and automation best practices.

PORTFOLIO PROJECTS

Billiards-themed full-stack portfolio — 95 automated tests across 5 frameworks in 4 languages.

league-api + break-and-verify — C#, ASP.NET Core, Entity Framework, PostgreSQL, Docker

- REST API for billiards league management with handicap scoring validation, soft delete patterns, and computed standings. Containerized with Docker + PostgreSQL. Tested by break-and-verify (SpecFlow/Gherkin, 32 scenarios).

the-practice-log + cue-qa — React, TypeScript, Tailwind, Playwright

- AI-powered billiards practice tracker with shot logging, trend visualization, and Claude API coaching. Vitest unit tests (16 scenarios) + Playwright E2E suite (21 scenarios, GitHub Actions CI).

rack-stats — Python, SQLAlchemy, Pandas, Streamlit, Plotly

- Tournament analytics pipeline for a simulated Florida billiards circuit. ETL + interactive dashboard. PyTest unit tests (14 scenarios) caught and fixed 2 real query bugs.

chalk-it-up — Flutter, Dart, Anthropic Claude API

- Cross-platform 9-Ball scorekeeper with AI trash talk generator. Flutter widget tests (12 scenarios).

the-playbook — Documentation, Process, AI Workflow

- Cross-project process documentation: PRDs, test strategies, and transparent AI-assisted development logs.

AI-ASSISTED DEVELOPMENT

I use AI as a collaborator, not a ghostwriter. Every project in this portfolio was built with AI assistance — and every AI decision was questioned, evaluated, and owned.

- Guided, not driven: I define the problem, challenge the output, and push back when something is wrong. AI accelerates the journey — it doesn't choose the destination.
- Domain knowledge as a filter: AI doesn't know billiards league handicap rules, healthcare billing workflows, or aerospace validation requirements. I do. Domain expertise is what makes AI output useful rather than generic.
- Transparent documentation: Every portfolio project includes an AI-NOTES.md logging what AI suggested, what I changed, and why — because the difference between AI-assisted and AI-driven development matters.
- Prompt engineering: I write structured, purposeful prompts that produce consistent, reliable output — and I know when to reject what comes back.

EDUCATION

Bachelor of Science in Information Technology — Purdue Global University
Associate of Science in Information Technology — Indian River State College