Spencer Presley

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Education

Salisbury University — Salisbury, MD
Bachelor of Science in Computer Science, Minor in Mathematics — *Aug. 2021 – May 2025*

Experience

Software Engineering Intern — May 2024 – August 2024
Horn Point Laboratory | saltcast.io — *Cambridge, MD*

- Developed a chatbot system using OpenAI models, FAISS, and RAG for the NSF-funded project 'Saltcast'
- Implemented conversation and entity memory as well as asynchronous processing for real-time user interactions
- Developed a RESTful API using FastAPI and deployed the application on AWS EC2
- Presented project and technical implementation at MIT Undergraduate Research Technology Conference

Artificial Intelligence Researcher — June 2024 – September 2024
Salisbury University | github.com/SpencerPresley/BitnetResearch — *Salisbury, MD*

- Trained and benchmarked Bitnet b1.58 models (arxiv.org/pdf/2402.17764) with 25M and 185M parameters
- Built comprehensive benchmarking suite for perplexity, latency, memory usage, and text generation
- Developed automated testing framework using Python for model evaluation across multiple datasets (enwik8, enwik9)
- Analyzed model performance using NumPy and custom metrics for mobile deployment feasibility

Projects

Academic Metrics | *Python, LangChain, MongoDB, Selenium, Next.js, TypeScript* — January 2024 – Present

- Developed production Python package with CLI tool for research analysis with 10K+ monthly PyPI downloads
- Built AI pipeline using LangChain to classify research into NSF focus areas and extract themes
- Designed scalable data collection system using Selenium, BeautifulSoup, and AI-powered data extraction
- Processed 600+ publications for Salisbury University, extensible to any institution
- Built full-stack web application with Next.js and TypeScript for visualizing research analytics
- Created comprehensive Sphinx documentation and automated PyPI/ReadTheDocs deployments with GitHub Actions

ChainComposer | *Python, LangChain, Pydantic, OOP, Design Patterns, Pytest* — January 2025 - Present

- Developed production Python package for LLM integration with 800+ downloads per month on PyPI
- Implemented CI/CD pipeline with 90%+ test coverage using pytest and GitHub Actions
- Designed modular, type-safe architecture using object-oriented programming, design patterns, and Pydantic
- Implemented comprehensive error handling with fallback mechanisms and logging

Technical Skills

- **Languages**: Python, TypeScript/JavaScript, C/C++, Java, SQL
- **AI/ML**: PyTorch, LangChain, FAISS, RAG, Scikit-learn
- **Libraries & Frameworks**: Pydantic, NumPy, Pandas, BeautifulSoup, Selenium, OpenMP/MPI
- **Web Technologies**: HTML/CSS, Next.js, FastAPI, React, Flask, Tailwind CSS, RESTful APIs
- **Developer Tools**: Git, Docker, AWS (EC2, S3), MongoDB, PostgreSQL, GitHub Actions, Poetry, Pytest

Hackathons

- HoyaHacks 2025: Built ResumeAI, a web app using Claude function calling to generate ATS-optimized resumes
- HackUMBC 2024: **Won 2nd place** overall and **best educational hack** with TestifAI, an AI-powered test generator
- Bitcamp 2024: **Won best overall hack** with TermBook, a terminal/cloud journaling app
- HenHacks 2024: Built SpotifyWrapPlus, a web app for Spotify analytics and music recommendations