Gabriel Fortuny

Ann Arbor, MI

Education

University of Michigan — **Ann Arbor, MI**
Bachelor of Science in Computer Science — *August 2021 – May 2025*
Bachelor of Science in Cognitive Science, Philosophy
- **GPA**: 3.2/4.0
- **Awards**: University Honors, College of Engineering Dean's Honor List
- **Coursework**: Web Systems, Mobile App Development, Computer Security, Database Management Systems, Data Structures and Algorithms, Software Engineering, Data Science, Computer Organization, Ethics

Work Experience

LSA Technology Services — **Ann Arbor, MI**
Engineering Technician — *June 2024 – December 2024*
- Developed a C# library for automated, reliable control of classroom cameras, enhancing operational efficiency.
- Configured and integrated audiovisual equipment for optimal classroom functionality.
- Optimized processes for preparing, documenting, and organizing inventory, supporting operational efficiency.

South Pointe Technologies — **Miami, FL**
Software Engineering Intern — *May 2023 – July 2023*
- Designed a relational database for a nonprofit, enhancing data integrity and record-keeping efficiency.
- Developed C++ data preprocessing scripts, automating record migration from Microsoft Access to SQL Server.
- Created entity-relationship diagrams to clearly articulate database design and facilitate implementation.

Project Experience

Epilepsy Treatment iOS App
- Engineered an iOS application for epilepsy clinicians leveraging AI to summarize complex clinical reports and extract critical data, featuring a scalable, containerized backend (Docker, Flask, PostgreSQL, Ollama).
- Led database schema and API design, documenting with OpenAPI specifications to enable seamless team collaboration.
- Contributed to full-stack development by implementing API endpoints and building a web portal, while upholding code quality through pull request reviews and cross-team coordination.

Instagram Clone
- Developed a full-stack Instagram clone with a Python/Flask backend and SQLite database, implementing comprehensive RESTful APIs for user authentication, post management, and social interactions, including secure password hashing.
- Designed a dynamic and responsive frontend using HTML, CSS, and React, seamlessly integrating with RESTful APIs to deliver an intuitive user experience with real-time content updates.

Pipelined CPU Simulator
- Engineered a C-based pipelined processor simulator with a 5-stage pipeline, incorporating optimizations for data forwarding, hazard detection, and branch prediction.
- Developed a comprehensive automated test suite to validate pipeline behaviors, covering data dependencies, branch mispredictions, and stalls, achieving high code coverage.

Search Engine
- Engineered a scalable search engine using information retrieval (TF-IDF, PageRank) and MapReduce.
- Developed an inverted index and RESTful API, implementing comprehensive text analysis (tokenization, stop word removal, case folding) for efficient search result retrieval.

Skills

Programming Languages: Python, C++, C, C#

Web Technologies: Flask, HTML, CSS, React

Tools & Platforms: Docker, Git, GitHub, PostgreSQL, SQLite, AWS, VS Code, Ollama, OpenAPI

Languages: Native Spanish speaker