

Elie-Joe Farah

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📍 Brussels, Belgium

Education

BE in Computer Engineering, Dean's Honor List — Lebanese American University 2021–2025
Master en Ingénieur Civil en Informatique — Université Libre de Bruxelles 2025–present

Professional Experience

QA Intern — *FOO* *Beirut — Jun 2025 – Jul 2025*

- Executed 2,500+ mobile/web test cases, contributing to early detection of regressions.
- Reported 25+ critical bugs via Jira, improving workflow clarity and test coverage.

Software Development and QA Intern — *ITG - ITB* *Beirut — Jun 2024 – Aug 2024*

- Built a PHP Laravel backend demo with REST-style API structuring and authentication workflows.
- Performed data-driven testing, identifying 20+ major issues and improving system stability.

Technical Projects

BatteryLCATool — Multi-Tenant LCA Data Platform | *Supabase, PostgreSQL, FastAPI, React, NumPy/SciPy*

- Built a multi-tenant platform for battery life-cycle inventory modeling, supporting manual data entry and structured Excel import with revision control and role-based access via Supabase Auth and PostgreSQL Row-Level Security.
- Implemented an async FastAPI pipeline that parses three Excel formats, atomically persists process and exchange data, and runs a parametric validation engine with per-exchange issue tracking.
- Built a Monte Carlo simulation engine (NumPy/SciPy) sampling parameterized uncertainty distributions with Spearman sensitivity analysis; designed an admin flow-mapping workflow (trigram search) and Excel export pipeline with Supabase Storage delivery.

AI-Aided Course Platform | *Python, SQL, LangChain, OpenAI API, React, Node.js*

- Built an AI assistant enabling semantic querying of course materials using LangChain and OpenAI APIs.
- Designed a full-stack system integrating backend APIs, SQL storage, and a React frontend, achieving 90%+ response relevance in peer testing.

PostgreSQL DNA Sequence Extension | *C, PostgreSQL, SP-GiST*

- Developed custom DNA and k-mer data types with C-based functions for sequence processing.
- Designed a trie-structured SP-GiST index enabling scalable k-mer queries.

yaLcc Compiler and LL(1) Parser | *Java, JFlex, Compiler Design*

- Implemented an LL(1) parser with grammar normalization and parsing-table generation.
- Integrated a JFlex scanner and produced LaTeX parse-tree visualizations for debugging.

Skills

Programming Languages: Python, Java, C/C++, JavaScript

Databases: PostgreSQL, SQL

Frameworks & Tools: FastAPI, React, Supabase, Docker

Languages: English, Arabic, French

Volunteering

- **My School Pulse**, 2018–2019 — Supported educational activities for hospitalized children.
- **Heartbeat – La Chaîne de l'Espoir**, 2019–2020 — Assisted efforts to expand access to healthcare.