

Abdallah Aloush

Alexandria, Egypt | abdallahaloush6@gmail.com | +20 12 11679806 | linkedin.com/in/abdallah-aloush
github.com/AbdallahAloush

Education

Alexandria University, BS in Computer and Communications Engineering

2018 – 2023

- GPA: 3.2/4.0

Experience

Mandatory Military Service, Egyptian Armed Forces

July 2024 – Sept 2025

Back End SWE Intern, TrianglZ LLC

Feb 2023 – Apr 2023

- Built multiple verification endpoints using Ruby on Rails, resulting in a more efficient verification process.
- Implemented authorization policies using Pundit, enforcing compliance with data access rules.
- Wrote and maintained API documentation using Swagger, resulting in fewer integration errors.
- Contributed to a CRUD API using **Ruby on Rails**, gaining hands-on experience in Backend workflows.
- Performed database migrations, allowing the support of new API features and ensuring data preservation.

Projects

Relational Database Management System (Graduation Project)

Rust

- Designed an SQL parser and developed logical and physical query planning systems capable of handling multiple inner joins, sorting, filtering, and grouping operations.
- Architected a storage engine featuring optimized buffer utilization, incorporating Hash and B+ Tree indexes, and supporting variable-length relation attributes.
- Implemented support for dynamic schemas encompassing various data types and relational constraints.

Gym Management System

Java

- Implemented a user-friendly GUI using JavaFX for adding, modifying, and managing users' data.
- Adhered to Test-Driven Development (TDD) methodologies within our team to ensure the system's integrity and conduct ongoing regression testing while collectively implementing new features.
- Used several OOP design patterns, including Singleton and Factory patterns, resulting in a readable and extensible code base.

Multithreaded Server-Client

Python

- Designed a multithreaded HTTP server, maintaining a persistent connection for each client.
- Implemented a heuristic timeout algorithm, preventing the server from being overloaded.
- Designed and implemented a simple client, allowing more robust testing of the server.

Mathematical Expression Interpreter

C

- Built a stack-based infix-to-postfix converter, improving expression evaluation efficiency.
- Stored evaluated expressions in a BST, enabling faster variable lookup.

Datastructures and Algorithms Implementations

Implementations of several commonly used Algorithms and Datastructures using C

- Designed an in-memory dictionary utilizing BST, enabling quick spelling checks and corrections.
- Designed a sorting algorithms benchmark app, enabling clear comparison of algorithms efficiency.

Operating Systems Projects

Collection of projects, simulating different parts of the OS and experimenting with POSIX threads on linux

- Multithreaded matrix multiplication and merge sorting
- Built a simulator for FIFO, LRU, CLOCK, and OPTIMAL page replacement algorithms, tracking and comparing page faults across test cases.
- Designed a producer-consumer system with multiple roles (producers, counters, collectors), using semaphores to coordinate shared resources.

- Created a simplified shell supporting command parsing, execution, background processes, and process termination logging.

Skills

Programming Languages: C | Rust | Python | SQL | Java | JavaScript

Web frameworks: Ruby on Rails | Express

Tools: Git | OOP | Datastructures | Algorithms | Design Patterns

Extracurricular Activities

Loyal Victorians

- Best media member of the science and engineering fair committee.
- Head of Media in the Graduation Ceremony Organizing Committee.

Courses

College: Programming | Datastructures | Discrete Math | Algorithms | Operating Systems | Database Systems | Computer Networks | Computer and Network Security | Software Engineering

Certifications

Fundamentals of Back End Engineering by Hussein Nasser