Ahmed Saber Rajab
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Summary

Fresh Computer Science graduate and backend engineer focused on Node.js and PostgreSQL. Former competitive programmer who loves problem solving and deep fundamentals .

Skills

Languages: JavaScript (Node.js), C++, Go, Java, Python, SQL.
DevOps: Docker, GitHub Actions, Linux, AWS (basic), Kubernetes.
Fundementals: Algorithms,Data Structures, OOP, Databases, Compiler, RESTful APIs, Microservices, CI/CD, Agile.

Work Experience

Backend Engineering Intern *Banque Misr — Aug 2024 – Sep 2024*

- Built and deployed a Spring Boot backend for banking operations (account, transaction, and customer APIs).
- Implemented reliable transaction handling and input validation; added integration tests for key endpoints.

Projects

Signify (Graduation Project) *GitHub*
AI-powered app bridging sign language and spoken/written language.

- Designed and implemented an advanced feature extraction pipeline using OpenCV, reducing processing time by 40% and streamlining the workflow for future data preprocessing tasks.
- Built Node.js backend for model inference, user authentication, and data flow between mobile client and model server.
- Used PostgreSQL for user management and translation history; designed schemas and indexed frequent queries.

Custom WebSocket Protocol *Live Demo*
RFC 6455-compliant implementation written from scratch in Node.js.

- Implemented handshake, framing/masking, ping/pong, and full-duplex messaging without external libraries.
- **Memory-friendly large messages:** Developed logic to pause producers when send/write returned false, resuming on drain/close; increased message throughput by 10% by optimizing memory allocation for message queues.
- Correctly handled fragmentation up to **1 MiB**+ per message; verified with an interactive real-time dashboard and benchmarks.

Omani Programming Language *Personal Project*
Statically typed toy language in C++ to explore compiler theory.

- Wrote a lexer, recursive-descent parser, and code generator emitting x86 NASM assembly.
- Supported variables, arithmetic, and control flow (`if/else`); produced working executables.

Education

B.Sc. in Computer Science *Minia University — 2021 – 2025*
GPA: 2.7/4.0.

Achievements

- Competitive Programming: **Expert** rank on Codeforces; ECPC and IEEExtreme participant.
- Solved 3,000+ problems on Codeforces, 300+ on AtCoder, 200+ on LeetCode.