Mohamed Yassin

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About Me

Fourth-year CS student skilled in Linux administration, networking, and backend development using Node.js and TypeScript (clean architecture, SOLID). Strong foundation in C++ and algorithms. Experience with microservices clustering and Redis. Basic Python. Learning Kubernetes, CI/CD with Jenkins and Docker, with a view to DevOps.

Work Experience

Web Development Intern – *Egyptian Space Agency (EgSA), Earth Observation Data Dept.* *Sep 2025 – Nov 2025*

- Built the **backend core** for the Egyptian Heritage Satellite Atlas platform.
- Worked closely with the frontend team, implementing UI and map features in **TypeScript + React**.
- Integrated satellite data workflows using **Google Earth Engine** and spatial data services.
- Developed role-based access control and dataset management modules.

Education

Modern Academy – *B.S. in Computer Science* *Sept 2022 – Present*

Projects

PeerLink – Distributed File Sharing Platform *repo*

- Built a high-performance distributed file sharing platform supporting real-time data transfer across clustered nodes with automatic load balancing, fault tolerance, and zero-downtime scaling.
- Implemented microservices-based backend with Redis-driven cluster coordination and pub/sub routing, PostgreSQL persistence, and intelligent leader election.
- Engineered native C++ acceleration for SIMD checksums and IO-heavy workloads, achieving significant throughput improvements.
- **Tools:** TypeScript, Node.js, C++ (N-API), Redis, PostgreSQL, Prisma, Socket.IO, React, Docker.

ZeroDown – Blue-Green Deployments on Kubernetes *repo*

- Engineered a zero-downtime Blue-Green deployment system on Kubernetes, automating Docker builds, manifest application, health checks, and traffic switching via Bash scripts.
- Configured Horizontal Pod Autoscaler (HPA), resource limits, and readiness/liveness probes to ensure high availability.
- **Tools:** TypeScript, Node.js, Express, Docker, Kubernetes, Minikube, Bash.

GUI RAT *repo*

- Developed a multi-client GUI-based remote access system supporting real-time session control and command execution using **Python** and **Sockets**.

CCNA 200-301 Final Project *repo*

- Designed and deployed a full enterprise network integrating VLANs, DNS, EtherChannel, STP, subnetting, and OSPF routing across ISP-connected infrastructure using **Cisco Packet Tracer**.

Technical Skills

Programming: C++ (Native N-API), TypeScript/Node.js, Bash, Python (basic)
Backend & DB: Distributed systems, Microservices, WebSockets, PostgreSQL, Redis, Prisma ORM
DevOps & Cloud: Docker, Kubernetes (HPA, probes, Blue-Green), Minikube, CI/CD basics
Linux & Tools: System administration, automation, Nginx, Git, SSH, VSCode, tmux, Ghidra, IDA Pro
Networking: OSPF, VLANs, STP, EtherChannel, Subnetting (CCNA level)

Additional Skills

Languages: Native in Arabic, Fluent in English
Certifications: Academic Degree in Cisco Certified Network Associate (CCNA) - 200-301 Level 1
Workspace: Leading, Self Learning, Planning, Teamwork, Adaptability & Problem Solving

Cybersecurity Experience

Web Penetration Testing: Conduct web penetration tests to identify vulnerabilities.
Reverse Engineering: Experienced in reverse engineering software using Ghidra and IDA Pro.

Key Achievements

- **TurboNodeIO** – Engineered a native C++ acceleration layer for Node.js, bypassing the event loop.
  - Achieved **18.95× faster performance** average vs standard TypeScript.
  - **317× faster** reading 100MB files, **56× faster** reading 1GB files.
  - **71× faster** SIMD checksums for 100KB buffers, **45× faster** for 1GB workloads.
- Webmaster of cyber-charm.net, a platform for Linux-related documentation.