Mohamed Sayed Ali

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Summary

Backend Node.js Developer and third-year Computer Science student. Developed a YouTube extension with 300+ active users, featuring a containerised Node.js/Fastify backend and AWS cloud deployment.

Education

- **Zagazig University** — Alsharqiya, Egypt
  Bachelor of Computer Science — Expected Graduation: 2027
  GPA: 3.5 (A)

Technical Skills

Languages: JavaScript, TypeScript

Backend Technologies: Node.js, Express.js, Fastify, REST APIs

Databases / Caching: PostgreSQL, Redis

Cloud / DevOps: Docker, AWS, CI/CD, Linux

Projects

- **TubeSize** | *Browser Extension + Backend API* — **Used by 300+ Active Users**
  - Built a **cross-browser extension** (Chrome, Firefox, Edge) in **TypeScript** that parses YouTube's internal stream metadata to display estimated file sizes per quality (144p–8K).
  - Designed a **four-stage fallback pipeline** in the service worker: **TTL-based local cache** → content-script data → direct page fetch → self-hosted API; reducing response time from 10–15 seconds to under one second for 95% of users.
  - Developed a popup interface using **React**, using a component-based approach to manage real-time state updates and user preference persistence across browser sessions.
  - Reverse-engineered YouTube's undocumented adaptive streaming formats (itags), building a mapping logic that extracts and normalizes video metadata across multiple quality levels (144p to 8K) and audio configurations.
  - Shipped a **Fastify + TypeScript** fallback REST API powered by `yt-dlp`, with **Redis** caching, rate limiting, and auto-generated **OpenAPI** docs; containerised with **Docker** and hosted on **AWS EC2**.
  - Automated the full release lifecycle with **GitHub Actions** across three environments: **local dev**, **staging** (every branch push), and **production** (git tag), publishing versioned extension packages to GitHub Releases on each production tag.

Languages

Arabic: Native
English: C1