Mohamed Elsobky

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Education

University of Ottawa — Sep. 2024 – Present
Honours Bachelor of Science in Computer Science in French - Perfectly bilingual - 3.70/4.00 GPA — Ottawa, Ontario
- **Relevant Coursework**: Data Structures, Digital Systems, Computer Architecture, Software Engineering

Technical Skills

Languages: Python, Java, C++, C#, TypeScript, SQL, x86/64 Assembly
Technologies: Linux, Ubuntu, Windows, Express, JUnit, PlantUML, Nginx, Redis, Proxmox, PostgreSQL, Kubernetes, Traefik, Nixpacks, Wireguard
Developer Tools: Git, Docker, Android Studio, IntelliJ, PyCharm, VS Code, Unity, Unreal Engine, Cloudflare
Practices: CI/CD, Agile Methodology, Secure Coding, Object Oriented Programming, API Design, IP Networking, Network Partitioning, Port Management, Unit Testing, UML Modeling

Experience

Automation Engineer Intern — April 2025 – September 2025
Pharmasave — Portland, Ontario
- Developed **workflow automations** to optimize weekly blister-pack dispensing, **saving 2 hrs per staff/week**.
- Built a Proxmox server with WireGuard VPN to replace TeamViewer, **cutting remote-access issues by ~90%**
- Enforced MFA on remote users and placed all apps behind VPN, allowing staff to **access pharmacy PCs off-hours**.

Software Engineer — Summer 2025 – Present
University of Ottawa MSA — Ottawa, Ontario
- Developed ⌁**uomsa.ca**, eliminating GoDaddy builder and **cutting annual costs by $500**.
- Led an **8-developer** team to rebuild organizational IT infrastructure supporting **1,000+ students**.
- Collaborated in an Agile team using **sprints**, GitHub **PR**s, and **CI/CD** pipelines to maintain high code quality.
- Built a multi-organization library system with **React** and **Supabase** used by **5+ organizations** (UOMSA, CUMSA, several Ottawa mosques) to manage book sharing and community resources.

Projects

⌁ Journale AI | *C#, C++, Node.js, Docker, Redis, PostgreSQL, OpenRouter API* — July 2025
- Built a cloud **AI dialogue system** that plugs into games and generates rich character interactions using large LLMs.
- Engineered a **custom API** backend using Express, Docker, and Redis for large traffic rate limiting and API key auth.
- Added usage analytics dashboards and player entitlement validation via **Steam & Epic Online Services APIs**.
- Developed Unity (**C#**) and Unreal Engine (**C++**) **SDK**, reducing integration time **from hours to <10 minutes**.

UTaste (Android App) | *Java, Android Studio, SQL, GitHub, JUnit, PlantUML* — November 2025
- Developed a restaurant workflow Android app, implemented role-based access, and built a local **SQL** data layer.
- Integrated **OpenFoodFacts API** for real-time ingredient and nutrition data; recipe builder with tracked macros.
- Created **UML diagrams** and implemented **JUnit** tests achieving 85% coverage of core application logic.

Home Lab Infrastructure | *Proxmox, Kubernetes, Docker, Cloudflare Tunnel, Traefik, Nixpacks, Git* — January 2025
- Built a 3-node **Kubernetes** (K3s) cluster to run web apps, APIs, databases, with multi-replica **horizontal scaling**.
- Set up **GitHub auto-deployments** with **Nixpacks** for continuous build and deployment to my servers.
- Securely exposed services via **Cloudflare Tunnels** and **Traefik** on my ⌁**custom domain**, with no port-forwarding.