

Mohamed Adel Samy

SOFTWARE ENGINEER

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PROFESSIONAL SUMMARY

Results-driven Software Engineer with over 5 years of experience building scalable, secure web applications using React.js, Node.js, Java, NestJS, and JavaScript. Expertise in developing RESTful APIs, implementing microservices architecture, and managing DevOps pipelines using Docker, NGINX, and Linux. Proven success in automating business processes, enhancing performance, and delivering reliable solutions in agile environments.

TECHNICAL SKILLS

- **Languages:** JavaScript, TypeScript, Java, SQL, HTML, CSS
- **Frontend:** React.js, Next.js, JavaScript ES6+, Redux, HTML5, CSS3
- **Backend:** Node.js, NestJS, Express.js, Java (Spring Boot), REST APIs, Microservices
- **DevOps & Tools:** Docker, Docker Swarm, NGINX, Linux, Git, GitHub, CI/CD, Agile
- **Databases:** PostgreSQL, MySQL, SQL Server, Database Design, Query Optimization
- **Workflow Automation:** Camunda BPM, BPMN, DMN, CMMN
- **GIS Tools:** PostGIS, Apache Superset, ERDAS IMAGINE
- **Soft Skills:** Problem Solving, Communication, Collaboration, Agile Methodologies

PROFESSIONAL EXPERIENCE

January 2022 - Current

Senior Software Engineer, Penta-b

- Built and maintained scalable full-stack applications using React.js (frontend) and NestJS/Java (backend).
- Designed and implemented RESTful APIs and microservices architecture, improving response times by 40%.
- Deployed and managed services using Docker and Docker Swarm, reducing system downtime by 30%.
- Configured NGINX as a reverse proxy and load balancer to enhance performance and request routing.
- Automated workflows using Camunda BPM, reducing manual processing by 50%.

- Led backend integration of smart asset tracking systems using GIS and IoT platforms.
- Performed routine database maintenance, backups, and tuning for PostgreSQL, ensuring high availability.

July 2020 – January 2022

GIS Developer, Edge-Pro for Information Systems

- Customized web-based GIS dashboards using JavaScript, HTML, and CSS, improving visual reporting.
- Developed form-based workflows and notification systems, enhancing communication efficiency.
- Conducted satellite image analysis and remote sensing for environmental research projects.
- Delivered product training and demos for clients using Skyline and ERDAS IMAGINE.
- Created technical documentation and user guides to streamline onboarding and support.

Full-Stack Developer, Freelancing Projects

- Developed **NextJS, PostgreSQL** full stack E-commerce Application with Role Based Authentication that allows Admins to visualize orders with their details and update the orders status for customers to monitor.
- Designed and developed a complete Hospital Management System using **ReactJS, NestJS, PostgreSQL** and **Redis**
- Designed and developed a POS system using **React Electron, NestJs** and **PostgreSQL**

PROJECTS

- **Internal Process Automation Tools:**
Developed full-stack tools to automate repetitive tasks and optimize work process for over 30%.
 - **Tech Stack:** Tech: ReactJS, NestJS, Docker.
- **Full-stack Development for Water & Wastewater Management (Egypt):**
Led the design and deployment of a resource management application across **Cairo, Giza, and Alexandria Governorates**, enabling real-time issue tracking and resolution for thousands of users.
 - **Tech Stack:** ReactJS (frontend), Java (backend), Docker (containerization), Camunda BPM (workflow automation).
- **Geo-Enabled E-Services for Oman's Ministry of Tourism (MOT):**
Developed geo-aware features for MOT's tourism portal, integrating GIS mapping and RESTful APIs to streamline visa applications and tourist site registrations.
 - **Tech Stack:** ReactJS, PostGIS, Docker Swarm (orchestration).
- **GIS Dashboards for Egypt's Ministry of Interior:**
Built interactive dashboards with geo-analytics for crime pattern visualization, using ReactJS for frontend and NodeJS for backend data processing.
 - **Tech Stack:** ReactJS, Apache Superset, NGINX (load balancing).

- **BPM Workflow Automation for Alexandria Governorate:**
Designed Camunda-based workflows for licensing and public complaint systems, reducing manual approvals by 50%.
 - **Tech Stack:** Camunda BPM, Java (microservices), Docker, PostgreSQL.
- **Emaar Egypt City Smart System**
Built an asset management system integrated with GIS and IoT platforms, enabling real-time monitoring and maintenance tracking.
 - **Tech Stack:** ReactJS, Java, Docker, NGINX, NestJS RESTful APIs, n8n.
- **Olympic City Smart System**
Built an asset management system integrated with GIS and IoT platforms, enabling real-time monitoring and maintenance tracking.
 - **Tech Stack:** ReactJS, Java, Docker Swarm, NGINX, RESTful APIs
- **Mapp Enterprise Dashboard Customization**
Customized dashboards using JavaScript API and CSS, improving data visualization and user interaction.
 - **Tech Stack:** JavaScript, CSS, Mapp Enterprise
- **Full-Stack E-Commerce Application**
Create a fully customizable E-Commerce Application with Role based Authentication that allows the admins to fully control the Application, monitor and update the status for submitted orders so customers can track their orders.
 - **Tech Stack:** NextJs, PostgreSQL
- **Backend for POS System**
Design and Develop the backend for a Point of Sale (POS) for a cafeteria while integrating with a Receipt Printer.
 - **Tech Stack:** NestJS, PostgreSQL
- **Backend for a Hospital Management System**
Designed and developed the backend for a Hospital Management System that supports very powerful features like:
 - JWT Authentication
 - Protected APIs based on user role
 - Medication expiry and low stock real-time alerts
 - Monitoring users' behavior on system and send alerts for Admins
 - Medication stock management
 - Patients' clinical history recording

- Uploading and serving files
- **Tech Stack:** NextJs, PostgreSQL, Redis

EDUCATION

2024 - Current

*Master of Business Administration, **Brooklen Business School***

2021 - 2022

*Full Stack Web Development Diploma, **Route Academy***

2013 - 2018

*Bachelor's degree in civil engineering, **German University in Cairo (GUC)***

SKILLS

ReactJS

Docker

Linux

NodeJS

Problem-solving

Java

Communication

Database Administration

NestJS

LANGUAGES

Arabic



English



German

