ADEL YASSER

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Senior Digital Twin Engineer

I am a highly motivated Research and Development Engineer with 3 years of hands-on experience driving performance-critical software and immersive Digital Twin technologies across high-impact national projects. I have expertise in Unreal Engine 5, full-stack development, LiDAR and GIS data processing, photogrammetry, and cloud-native infrastructure including Docker and Kubernetes. I stand out because of my ability to deliver measurable impact, such as a 20x rendering performance boost, and to align engineering solutions with the strategic goals of senior stakeholders, CVPs, and enterprise partners.

Areas of Expertise

- Digital Twin Development
- Software Engineering
- Full-Stack Development
- C++ and Blueprint Scripting (UE5)
- GIS and LiDAR Data Analysis
- Performance Optimization
- Agile Project Management
- NVIDIA Omniverse & OpenUSD
- Software Testing & QA

Work Experience

Freelance Digital Twin Engineer | Alexandria — Sep 2026 – Present

Designing and building urban, retail and AR digital twin prototypes on open geospatial data and custom solvers.

- **Lead Engineering & Consulting (NDA):** Traffic, crowd simulation and urban monitoring for a client in Thailand.
- **Co-Founder, Stealth Startup:** Retail spatial AI, AR store twins, QR tracking, ML, Gaussian Splatting R&D.
- **Shadow Twin**: Shade, heat and wind twin of Manhattan, Rotterdam and Dubai (CesiumJS, WebGL, own wind solver).
- **Scan-to-Twin**: Python ghost-point removal for terrestrial laser scans via cross-station visibility, tested on real data.

Research and Development Engineer (Digital Twin) | Cortex Innovations, KAUST — Dec 2023 – Aug 2026

Driving real-time simulation pipelines and innovation across flagship digital twin projects with high-impact partners.

- Led Unreal Engine 5 optimization efforts increasing performance 20 times, reducing frame drops in high-fidelity simulations.
- Directed LiDAR and GIS data R&D, enabling scalable urban reconstruction pipelines for NEOM and Al-Haramein.
- Delivered cross-functional Agile delivery with 10+ international engineers, achieving 100% sprint delivery over 18 months.
- Built AI-Toolbox: traffic, crowd, bus-emissions and photogrammetry modules, enhancing stakeholder adoption by 40%.
- Drove end-to-end development of NEOM Interactive Experience and Al-Haramein, presented to senior CVPs and partners.

DevOps Intern | Bibliotheca Alexandrina — Sep 2023 – Oct 2023

- Orchestrated 5+ containerized services with high availability design, reducing service downtime by 90%.

Professional Web Development Intern | MCIT — Sep 2022 – Sep 2022

- Optimized RESTful APIs for peak load, increasing query performance by 45% on data-heavy endpoints.

Web Development Challenger Intern | MCIT — Aug 2022 – Aug 2022

- Delivered responsive front-ends for 3 applications, reducing bounce rate on key views by 30%.

Software Engineer Intern | RMZTech — Sep 2021 – Oct 2021

- Built a full-stack platform for 100+ users, improving team delivery speed by 20% via agile tooling.

IT Intern | Electricity Distribution Company, Alexandria — Aug 2021 – Aug 2021

- Supported IT operations, audits and infrastructure troubleshooting on 10+ systems with senior engineers.

Education

- **BSc in Computer and Communications Engineering**, Alexandria University (GPA: 3.39/4.0) — July 2024

Skills & Languages

- **Programming Languages:** C/C++, Python, JavaScript, Java, NodeJS, Solidity
- **Frameworks:** Unreal Engine 5, Docker, Kubernetes, ReactJS, NextJS, ExpressJS, React Native, ArcGIS, QGIS
- **Simulation & 3D:** NVIDIA Omniverse, OpenUSD, Photogrammetry, CesiumJS, WebGL, Traffic & Crowd Simulation
- **Tools & Technologies:** REST APIs, High Availability, AI/ML Integration, MySQL, MongoDB, Hardhat
- **Languages:** Arabic (Native), English (Fluent)

Certifications

- NVIDIA Certified Associate, OpenUSD Foundations and Workflows (first beta cohort) | NVIDIA — Nov 2026
- ISTQB Certified Tester Foundation Level (CTFL v4) | ESTB #260520024 — Jun 2026
- NVIDIA-Led Omniverse Training | KAUST — Aug 2024
- AWS Data Analytics & Machine Learning (Oct), AWS Cloud Foundation (Jul) | AMAZON — 2022

Graduation Project

Plutus – AI-driven Stock Investment Platform (GitHub)

- Developed a full-stack web platform supporting 500+ concurrent users, streamlining stock investment workflows.
- Developed an AI prediction system (LSTM/GAN) and a chat bot, providing stock forecasting on the local stock dataset.

Selected Projects

- **7ofra Road Hazards** – Built a web app supporting 100+ monthly users, supporting 3 types of hazards on Leaflet maps.
- **BookScape** – MERN stack application with optimized database queries, offering a user-friendly interface.
- **NFT-powered-fully-on-chain DAO** – Built a Solidity/NextJS platform for NFT co-investing and on-chain voting.
- **Mini Bash Shell** – Engineered a Linux shell capable of executing over 20 standard commands and pipelines (C++).
- **Car Rental System** – Built a NodeJS/Express/MySQL app for managing rentals and streamlining vehicle bookings.
- **Library Management System** – Java GUI app for book lending, fee tracking, and admin tools.