Mohamed Elmarzougui

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Portfolio: https://github.com/elmarzmo

Professional Summary

Detail-oriented and passionate computer science student (GPA 3.89) specializing in Software Engineering. Proficient in full-stack web development, graphics programming, and mobile architectures. Energized by complex problem-solving, rapid learning, and delivering high-impact solutions.

Technical Skills

Languages: C++, Java, HTML, CSS, SQL, Python
Frameworks & Tools: OpenGL, Express, MongoDB, Angular, Node.js, Android Studio, SQLite, TensorFlow
Other: OOP, REST APIs, JWT Auth, UI/UX Design, Reinforcement Learning, Data Analysis

Education

Bachelor of Science in Computer Science – Software Engineering
Southern New Hampshire University – Manchester, NH
Expected Graduation: May 2025 | GPA: 3.89 / 4.00

Associate Degree in General Chemistry for Education
University of Ibn Zohr – Agadir, Morocco
Graduated: June 2017

Projects

- Travlr Getaways Full-Stack Web App | MEAN (MongoDB, Express, Angular, Node.js)

  - Engineered a full-stack travel booking platform with both client-facing and admin functionality.
  - Created Angular SPA for admin management and Express/Node RESTful API secured via JWT for trip/customer CRUD.
  - Verified reliability with Postman testing and optimized MongoDB schemas for performance.

- 3D Scene Rendering with OpenGL | C++, OpenGL

  - Built an interactive 3D environment with camera navigation, toggleable projections, and advanced lighting.

- Card Game Application | Java, OOP

- Developed a full-fledged card game with deck management, polymorphic card handling, and win/loss logic.

- AI Pathfinding with Deep Q-Learning | Python, TensorFlow, Jupyter

  - Implemented and trained a Q-learning agent to navigate a maze ("TreasureHunt") using deep reinforcement learning.
  - Designed an epsilon-greedy strategy and deep Q-network achieving optimal pathfinding performance.
  - Explored deep learning architectures like DQN, CNN, and actor-critic models; documented key ethical considerations in AI.

- Inventory Management Mobile App | Java, Android, SQLite

  - Developed an Android app enabling user authentication and local SQLite storage for inventory items.
  - Created dynamic UI layouts in a scrollable view for adding, editing, and removing items; implemented real-time quantity updates and zero-stock notifications.
  - Employed iterative feature-based coding and robust test case design to validate login and inventory management flows.

- Structured Database Project | SQL, MySQL

  - Designed relational database schemas and optimized complex queries for data analysis and reporting.