Hatem Almasri

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Experience

Software Development Intern May 2025 – Present
AzureProz *Toronto, ON*

- Developed and maintained backend features using Python and Flask for internal applications, improving system reliability and performance.
- Implemented and optimized RESTful APIs connected to a MongoDB database, supporting data access for web-based tools.
- Built internal tools that improved deployment automation and reduced setup time for new clients by 20%.
- Contributed to the backend development of cloud-native web applications using Python and JavaScript, with a focus on secure and maintainable code.
- Collaborated with full-time engineers on debugging and resolving software issues across multiple codebases, using Git for version control.
- Created internal documentation detailing AI integration points, model usage, and data flow, aiding knowledge transfer for future engineering teams.

Projects

Chatty | *React, MongoDB* June 2024

- Designed and developed a fully responsive live chat application leveraging Node.js for backend functionality and WebSockets for real-time communication.
- Implemented robust database management using MongoDB to store user data, chat logs, and app configurations securely and efficiently.
- Created a dynamic theme system offering 32 customizable color themes, enhancing user personalization and engagement
- Integrated advanced message features, allowing users to share images and text as a single cohesive message, improving communication flexibility.

3D Sphere Visualizer | *Python, C Mathematical Modeling project* Dec 2024

- Developed a C-based 3D sphere visualizer utilizing ray-tracing techniques to render spheres with realistic lighting, shadows, and reflections.
- Implemented algorithms to calculate sphere-ray intersections, light diffusion, and shading effects, enabling detailed and accurate visualizations.
- Created a dynamic animation generator that adjusts light positions over 90 frames, producing a 90 FPS video to illustrate changing light effects.
- Integrated anti-aliasing methods to enhance image quality by reducing jagged edges and improving visual smoothness.
- Included advanced file I/O support to generate and process PPM image sequences for video creation, ensuring seamless output workflows.

Education

University of Alberta Edmonton, AB
Bachelor of Science in Computer Science *Sep 2023 – May 2027*
Relevant Coursework: Foundations of Computing I / II – Programming Methodology (C) – Discrete Math and Computer Logic – Computer Architecture – Algorithms I – Machine Learning.

Technical Skills

Languages: Python, C, JavaScript, HTML/CSS, SQL, RISC-V Assembly
Frameworks: React, Node.js, Material-UI, FastAPI, OpenAI API
Developer Tools: Git, MongoDB, PostgreSQL