Muhammad Omer Mustafa

Bachelor in Computer Science

CONTACT

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PROJECTS

- **MNIST Neural Network Accelration on GPU** (C/CUDA)

  Developed a GPU-accelerated neural network for MNIST digit classification using CUDA in C/C++. Optimized matrix operations to achieve speedup compared to CPU-based implementations. Integrated CUDA kernels for parallelized training and inference, reducing runtime for large datasets.

- **Lost & Found System** (Node.js, React.js, MongoDB)

  Built a full-stack web application to track lost items on campus. Implemented user authentication, and notifications. Designed a responsive React frontend and a RESTful Node.js backend.

- **Gym Manager System** (C#, .NET, MySQL)

  Developed a comprehensive gym management application using C#, .NET framework, and MySQL database. Implemented features for membership tracking, class scheduling, and payment processing. Designed a user-friendly interface for both staff and clients.

- **AI-Driven Car Racing System** (Python, TORCS Framework)

  Developed an AI-driven car racing controller using Python within the TORCS framework. Processed telemetry data for track awareness and real-time decision-making. Optimized performance metrics such as speed, obstacle avoidance, and track following.

EDUCATION

FAST, NUCES Islamabad | 2022-2026

Bachelor of Science in Computer Science

- 6 Semesters in

Punjab Group of Colleges, Gujranwala | 2019-2021

Fundamental of Sciences in Pre-Engineeng

- Grade: A+

TECHNNICAL SKILLS

- **Programming Languages:** C/C++, Python, Java, MASM 32-bit Assembly, C#
- **Frameworks & Libraries:** CUDA Toolkit, Node.js, React.js, SFML, Express.js
- **Databases:** MongoDB, SQL
- **Tools & Technologies:** Git
- **Game Development:** Collision Detection, Particle Systems, Behavior Design

INTERESTS

- **AI/ML & Computer Vision:** Deep learning for image recognition, object detection, and semantic segmentation.
- **Image Processing:** Techniques for image enhancement, feature extraction, and pattern recognition.
- **High-Performance Computing:** Leveraging CUDA and parallel computing for scalable AI solutions.