MUHAMMAD HASAN WAQAR

Islamabad, 44000, Pakistan | +92 302 8547083 | hasanwaqar13.9.3@gmail.com

Education

A-Level **01/2020 to 01/2022**
Westminster Academy Islamabad Islamabad, Pakistan
- Grades: A,B,C,D

O-Level **01/2019 to 01/2020**
Khaldunia High School Islamabad, Pakistan
- Grades: 6A*s, 3As

Bachelor of Science: **Computer Science** **01/2022 to Current**
FAST NUCES Islamabad, Pakistan
GPA: 3.5

Skills

- **Languages:** C, C++, C#, HTML, CSS, JavaScript, Python, Java, SQL, Assembly
- **Frameworks:** PHP, Laravel, Django, REST APIs
- **Tools & Technologies:** Git, MySQL, PostgreSQL

Experience

Lab Demonstrator **08/2023 to 12/2024**
FAST NUCES **Islamabad, Pakistan**
Object-Oriented Programming, Data Structures, Database Systems
- Led lab sessions and clarified complex programming and database concepts to improve student understanding and assignment performance.
- Provided one-on-one support, fostering a collaborative and inclusive learning environment.

Web Development Intern **06/2024 to 07/2024**
Center for Evaluation and Development (C4ED)
Built a secure Person Info Management System using Laravel (MVC), PHP, HTML, CSS, and JavaScript.
- Developed RESTful APIs and dynamic, validated forms for efficient user interaction.
- Integrated role-based access control and session handling with cookies and middleware.
- Ensured database connectivity, data integrity, and system security following best practices.

Projects

Neural Network Acceleration on GPUs
- Collaborated on optimizing a neural network for the MNIST handwritten digit classification, utilizing CUDA to accelerate performance through GPU-based computation.
- Implemented memory management techniques, improved communication strategies, and leveraged tensor cores to significantly enhance processing speed and efficiency.

Interplanetary File Management System (IPFS)
- Developed a decentralized file-sharing application utilizing IPFS, employing content-based addressing and a Distributed Hash Table (DHT) for efficient file storage and retrieval.
- Enhanced data access speed by 30% and improved reliability through geo-distributed nodes, ensuring scalable and fault-tolerant file management across multiple peers.

Real-Time Autonomous Racing Controller – TORCS, Python
- Developed a high-performance racing controller using telemetry data and UDP communication with the TORCS simulator, optimizing speed and track navigation through non-rule-based control strategies.
- Integrated a Python client with the TORCS framework, ensuring seamless communication with standardized sensor-actuator interfaces and real-time decision-making.

Employee Payroll & Leave Management System - Django, PostgreSQL
- Designed a web application that allows employees to submit leave requests, view payslips, and track leave balances, streamlining HR processes and improving overall operational efficiency.
- Developed using Django for backend logic and PostgreSQL for robust database management, ensuring secure data storage and seamless integration of automated payroll calculations and leave tracking features.