Muhaddis Farooq

Full-Stack Software Engineer

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Professional Summary

Full-Stack Software Engineer with strong experience in developing intelligent, scalable, and secure applications powered by AI and large language models (LLMs). Proficient in Python, .NET, React, and modern DevOps pipelines. Skilled in architecting end-to-end web solutions, integrating LLM workflows, and deploying across AWS platform. Experienced in agile development, cloud-native CI/CD, and building impactful user-facing systems that deliver performance, usability, and innovation.

Technical Skills

- **Programming Languages:** Python, C++, C#, JavaScript, SQL
- **AI/ML Frameworks:** TensorFlow, PyTorch, Scikit-learn, OpenCV, LangChain
- **Generative AI & NLP:** Prompt Engineering, LLM Integration (OpenAI, open-source)
- **Web Frameworks:** Flask, FastAPI, ASP.NET Core, React.js
- **Databases:** PostgreSQL, MongoDB, SQL Server
- **DevOps & Cloud Platforms:** AWS (EC2, S3), Docker, Git, GitHub Actions
- **Tools & IDEs:** VS Code, Jupyter Notebook
- **OS & Environments:** Windows, Linux (Ubuntu), macOS
- **Methodologies:** Agile Development, CI/CD, Secure Coding Practices
- **Soft Skills:** Team Collaboration, Project Ownership, Technical Writing, Research Communication

Experience

Full Stack Developer (Remote) – HydraEV (UK) **Aug 2024 – Jun 2025**

- Designed and developed HydraEV's complete corporate website for their electric vehicle product line, building the frontend using Bricks Builder (WordPress) and integrating dynamic backend modules via PHP.
- Worked closely with the business team to understand customer journey flows and implemented responsive user interfaces for product navigation, charger details, and lead capture forms.
- Deployed branded design assets and optimized loading performance through lazy loading, image compression, and CDN support.
- Managed Meta and Google Ads performance reporting integration; ran A/B tested landing pages that improved conversion rate by 23%.
- Implemented on-page SEO strategy and improved Lighthouse scores from 61 to 95+.

Senior Software Engineer (Remote) – LumaByte Pvt **Sep 2023 – Jul 2024**

- Led the development of a cloud-based sports event platform using React.js for UI, Express.js and .NET for backend services, and MongoDB/SQL Server for dynamic data persistence.
- Deployed the frontend to AWS S3 and backend APIs on EC2, configured load balancing using Nginx, and managed database hosting on Amazon RDS.
- Spearheaded the research and development of "Sketch2Face" — an internal AI tool converting facial sketches into realistic human images using Pix2PixHD and Stable Diffusion.
- Built a GPU-accelerated inference backend with Flask, integrated real-time image editing via prompt-based input, and optimized the generation pipeline for fast turnaround.
- Set up CI/CD pipelines using GitHub Actions and Jenkins, enabling automated build, linting, testing, and container deployments.
- Followed secure development practices, implemented JWT-based auth and input sanitization, and enforced HTTPS routing and role-based access.

Software Engineering Intern – Buch International Hospital **Jun 2023 – Aug 2023**

- Designed and implemented several UI components of the hospital's patient-staff portal using HTML, CSS, JavaScript, and integrated them with a PHP-MySQL backend.
- Participated in sprint discussions and feature planning sessions with clinical stakeholders to ensure real-time functionality requirements.
- Ensured responsive and accessible design across desktop and mobile views, and implemented validation for medical records input forms.

Projects

Sketch2Face – AI-Powered Face Generator (Pix2PixHD, Stable Diffusion) GitHub Link

- Built a deep learning application that converts hand-drawn facial sketches into realistic human images using a combination of Pix2PixHD and Stable Diffusion models.
- Deployed model inference through Flask and integrated a user-friendly UI for sketch uploads, real-time generation, and image editing via prompt-based modification.
- Optimized GPU inference for rapid result delivery and incorporated checkpoint resuming for long-generation sessions.

Pollution Monitoring Dashboard (Python, MLOps) GitHub Link

- Built a real-time air quality monitoring system using MLflow for experiment tracking and Grafana/Prometheus for live visualization of pollution metrics.

- Trained predictive models using historical pollution datasets to forecast alert conditions and deployed them with automated retraining on updated data.
- Set up Dockerized deployment pipeline with periodic jobs running in a secure cloud-hosted environment.

Learn2Drive – Driving School Platform (React, Express.js) GitHub Link

- Developed a full-featured booking and management platform for driving institutes with React.js frontend and Express.js RESTful API backend.
- Implemented protected routing, dynamic slot management, instructor dashboards, and form validation.
- Designed reusable components for calendar integration and email confirmations.

Student Portal (ASP.NET, SQL Server) GitHub Link

- Created a complete academic portal for student record management, assignment tracking, and grading modules using ASP.NET Razor Pages and SQL Server.
- Integrated role-based access and dashboard-level analytics for instructors.

Medicine Distribution System (HTML, JS, CSS) GitHub Link

- Designed a responsive pharmacy logistics interface to track inventory, restocking, and delivery dispatches.
- Enabled real-time monitoring of low-stock items and generated alerts.

VisionNext: Comparative Frame Prediction (PyTorch) GitHub Link

- Developed an advanced deep learning pipeline to predict future video frames using a comparative study of PredRNN, ConvLSTM, and Transformer-based architectures.
- Designed and trained models in PyTorch on custom preprocessed video datasets consisting of sequential grayscale frames (64x64).
- Implemented temporal-aware encoding of sequences, evaluated performance using MSE and SSIM, and visualized predictions alongside ground truth.
- Automated training workflows, model saving/loading, and result tracking to benchmark the efficiency and accuracy of each approach.
- Contributed to future research by analyzing frame coherence, temporal smoothing, and the impact of different temporal depths.

TutorFinder Application (React, Node.js, MongoDB) GitHub Link

- Designed and developed a full-stack web application to connect students with qualified tutors based on subject expertise, location, and availability.
- Built the frontend using React.js with a responsive design for both desktop and mobile users, implementing real-time search filters and interactive tutor profiles.
- Developed a RESTful API backend with Node.js and Express.js, and used MongoDB to store user data, tutor profiles, schedules, and messages.
- Implemented secure login, role-based dashboards (Student/Tutor), and appointment booking functionality.
- Integrated chat and notification systems to enable direct communication between tutors and students.

Education

FAST NUCES, Islamabad **2021 – 2025**
Bachelor of Science in Computer Science (BSCS)
GPA: 3.75 / 4.00

Punjab Group of Colleges, Multan **1075 / 1100**
F.Sc. Pre-Engineering

La Salle Higher Secondary School, Multan **996 / 1100**
Matriculation