

Mahad Mubashir Beg

Software Engineer

Cell: +92 300 426 2828

Email: mahadlgs@gmail.com

D.O.B: 10 August 2001

Education

B.Sc. Computer Science | CGPA: 3.13/4.0 | 2019-2023 | Lahore University of Management Sciences

Coursework: Data Structures, Algorithms, Operating Systems, Artificial Intelligence, Network Centric Computing, Software Engineering, Databases, Data Science, Data Mining, Block Chain Technology, Computer Organization and Assembly Language

A-Levels | 2A 1B | 2019 | Lahore Grammar School | University of Cambridge International Examinations

O-Levels | 2A* 6A | 2017 | Lahore Grammar School | University of Cambridge International Examinations

IELTS | 7.5 | 2024

SAT | 1460 | V:690, Q:770 | 2018

Publications

M. Mubashir, Z. Afzal, and R. Rafay, "PoW to PoS Transition: Early Lessons from Ethereum's Merge", 5th IEEE International Conference on Blockchain, 2023.

Projects

Numbers AI: Multimodal Voice Bot Platform for Business Automation | 2024

Developed a customizable platform for creating multi-lingual voice bots tailored to business needs, enhancing 24/7 customer engagement, lead management, and workflow automation. Built with Python FastAPI and LiveKit Agent, leveraging OpenAI's real-time API for low-latency responses. Used Twilio for buying numbers and call forwarding.

AI-Powered Restaurant Reservation and Order Management Voice Bot | 2024

Engineered a voice bot using Deepgram for speech-to-text, Eleven Labs for text-to-speech, and OpenAI's real-time API for LLM-generated responses. Optimized model parameters to reduce latency and improve transcription accuracy, automating reservation booking and order-taking with scalable backend workflows.

IT Curves: Accessible Ride-Booking Chatbot with Advanced AI Integration | 2024

Leveraged Python FastAPI framework to develop a chatbot facilitating ride bookings for customers with disabilities, enhancing accessibility and user experience. Implemented a real-time Named Entity Recognition model using Groq LLaMA 3.1-70B-Versatile for dynamic address suggestions. Employed few-shot prompt engineering techniques and fine-tuned OpenAI's GPT-4o model via LangChain for conversational interactions and booking management.

Somos: Ethereum Crypto Wallet application with scheduled bulk transfers | 2024

Developed a subscription-based crypto wallet application utilizing Web3.js for Solana blockchain interaction. Integrated MoonPay for on-ramp and off-ramp transactions, and PayPal payment gateway for subscription payments. Deployed Ethereum smart contracts in Solidity for scheduled bulk transfers.

Video2Music: AI-Driven Video to Music Conversion Platform | 2023

Developed a full-stack web app using React and Python that allows users to upload videos, transcribe audio with WhisperAI. Fine-tuned GPT-3.5-T for mood analysis, and synthesize AI-generated music using Meta's MusicGen.

Inflo: One click Information Sharing Mobile Application | 2023

Designed a scalable database schema with Prisma ORM for seamless migrations and optimized query performance. Developed APIs integrating Twilio, SendGrid, and Firebase, hosted on AWS EC2 with a CI/CD pipeline, and implemented Firebase Admin SDK for real-time notifications.

Baichday: Web based Bidding Platform using MERN Stack | 2023

Developed a MERN stack web app with a user-friendly UI designed in Figma and ensured functionality through Cypress automated testing, enabling secure bidding and efficient item listing.

Comprehensive Analysis of UK Traffic Accidents (2000-2016) | 2022

Analyzed dataset using EDA, correlation heatmaps, k-means clustering, and FP Growth to uncover patterns and trends. Identified key factors such as vehicle type, regional accident distributions, providing insights into safety concerns and climate-awareness shifts. The project aimed to leverage data-driven techniques to identify actionable insights for reducing traffic accidents.

Unveiling Road Accident Patterns and Trends: A Data Mining Approach | 2022

Performed exploratory data analysis, statistical analysis and visualization, to understand accident trends. Applied clustering and frequent pattern mining algorithms to identify accident hotspots, developed data-driven recommendations for enhanced road safety.

A Neural Network's Exploration of Custom Image Data | 2021

The goal was to develop and evaluate a neural network for classifying fashion items from images. Built and evaluated a multi-layer perceptron, trained via backpropagation, on Fashion MNIST and a custom dataset. Applied normalization and one-hot encoding. Achieved high accuracy on fashion item recognition, reflecting expertise in neural network architecture, hyperparameter tuning, and model evaluation.

Self-Driving Car: A PCB-Driven Autonomous Vehicle | 2019

Designed and developed a self-driving car capable of path navigation. Built a custom PCB using Proteus to integrate IR sensors, motor drivers, and an Arduino microcontroller. Modelled and 3D-printed the chassis using SolidWorks and programmed the Arduino to process sensor inputs and control movement via a motor driver IC.

Experience

Senarios PVT Ltd | Full Stack Engineer | September 2023 – Present

- Developing AI-powered platforms and Web3 apps focusing on business automation and customer engagement.
- Proficient in backend development using FastAPI and Node.js, API integration, and AWS-based deployments.
- Responsible for leading projects, and improving client acquisition with effective proposals and collaboration.

Embedded Processing Limited | Junior Software Developer | Aug 2022 – Aug 2023

- Implemented WI-SUN communication protocol integration into Smart Meters' embedded C codebase, concurrently conducting rigorous unit testing through hardware flash programming.
- Elevated user experience by enhancing front-end design with Vue JS, while concurrently enhancing backend functionality to introduce dynamic features, resulting in substantial efficiency gains.
- Resolved intricate bugs within the embedded codebase of a portable dialysis machine in C and C++, ensuring robust performance and safety standards. Automated testing utilizing VectorCAST to validate code integrity and reliability.

Suave Solutions | Software Development Intern | June 2022 – July 2022

Designed front-end of a web application using HTML/CSS and ensured consistency across 20+ web pages.

SB&B Marketing Research | Market Research Intern | Jan 2020 - Aug 2020

Assisted the Senior Strategist on Auto-car surveys by conducting 200+ face to face interviews with car owners in customer satisfaction surveys, brand image/health surveys, new product development, pricing and post launch surveys.

Honda Atlas Cars Pakistan Ltd. | Research Intern | 2018

Performed Data collection & analysis for a marketing research project on Automobile Features Preference & Vfm.

Akhuwat | Marketing Intern | 2018

Fundraised and led 40+ volunteers from the transgender community to promote inclusivity in a campaign distributing free clothes to 200+ financially disadvantaged families

Achievements & Activities

- **Dean's Honour List:** Recognized for academic excellence in Spring 2020 and Fall 2022.
- **Football Excellence:** Awarded the prestigious LUMS Football Team Color Award and named Top Goal Scorer for two consecutive years, showcasing consistent performance.
- **Cricket Excellence:** Achieved Top Runs Scorer Award for the LUMS Cricket Team, scoring six half-centuries and two centuries across competitive matches.
- **Leadership in Sports:** Captained the LUMS Football Team to a historic victory at the UCL Sportsfest'23 Inter-University Tournament, exemplifying teamwork and strategic excellence.
- **LRP Football League'22:** Crowned Top Scorer and secured the Runners-Up trophy in a competitive league hosted by SA Gardens.
- **Team of the Year 2022:** Contributed to LUMS Football Team being awarded the prestigious title.
- **LSE Sports Gala'22:** Part of the winning LUMS Football Team and honoured with the Best Delegation Award, representing my institution with pride.
- **Islamic Microfinance Leadership:** Core Team Member for the 2nd Islamic Microfinance Round Table Conference, hosting 50+ participants from leading organizations in the microfinance sector (June 2018).
- **Environmental Stewardship:** Volunteered for Lahore Conservation Society's plantation drive, planting 1,000 trees across parks and government schools to promote a greener city.
- **A-Level Merit Scholarship:** Awarded a 100% merit-based scholarship for exceptional academic performance.
- **JT Sportsfest Leadership:** Served as Logistics Head for one of Pakistan's largest sports Olympiads, coordinating 1,500 participants from 62 high schools and colleges competing across 12 sports.
- **Innoventions Security Head:** Led security arrangements for JT Innoventions, a national high school STEM Olympiad with 675 delegates from 27 institutions.
- **Cultural Ambassador:** Represented Pakistan as part of a 14-member delegation on a cultural exchange program to Azerbaijan and Uzbekistan, promoting cross-cultural understanding.
- **Academic Distinctions:** Achieved Internal Distinction in O-Level Chemistry and Straight A's in Cambridge O-Level exams.