Usman's Portfolio

Technology has always been a transformative force, shaping societies in unprecedented ways and redefining how we interact, conduct business, and solve real-world problems. My passion for technology and software engineering has been a defining aspect of my journey, leading me to where I am today. Born on September 24, 1995, I have spent my years constantly evolving with the technological landscape, embracing challenges, and continuously learning. With nearly 29 years of life experience, I have always been fascinated by how software, artificial intelligence, and cloud computing contribute to shaping industries and making life more efficient.

My academic journey began with a strong foundation in information technology. I pursued my Bachelor of Science in Information Technology at the University of the Punjab, a program that gave me the technical expertise and analytical skills necessary to succeed in the field. Not only did I graduate with distinction, but I also achieved a CGPA of 3.93/4.00, which earned me the honor of being a gold medalist. During my undergraduate years, I immersed myself in programming, databases, and cloud computing while actively participating in research and development projects. Excelling academically was a priority, but what truly drove me was the ability to apply theoretical knowledge to practical problems. This academic success led me to receive one of the most prestigious scholarships, His Majesty the King's Scholarship, awarded by the Royal Thai Government. This enabled me to take my education to the next level by pursuing a Master's in Data Science and Artificial Intelligence at the Asian Institute of Technology (AIT), Thailand, where I began my studies in August 2024. The transition from undergraduate studies to a master's program was both exciting and challenging. The most demanding aspect of my graduate studies so far has been the depth of mathematical and statistical foundations required for AI and machine learning. While I had previously worked with data analytics and machine learning models, the master's program requires an even deeper understanding of complex algorithms, optimization techniques, and real-world applications. Balancing research, coursework, and practical projects has been a demanding yet fulfilling experience.

With over two years of professional work experience, I have gained hands-on exposure to various aspects of software engineering. Currently, I am employed as a Software Engineer at HotelKey, a US-based company, where I work remotely, contributing to a highly dynamic and innovative environment. Before this, I served as an Associate Software Engineer at the same company, progressing in my role due to my contributions and ability to handle complex technical challenges. My work primarily revolves around developing and maintaining RESTful APIs, cloud-based architectures, and scalable software solutions. I specialize in using Java, Python, C, and C++, along with a range of Amazon Web Services (AWS) tools such as CloudWatch, S3, Athena, DynamoDB, Lambda, SNS, and SQS. My responsibilities include working on microservices, database

optimization, cloud integrations, and security implementations. One of my key projects has been transitioning over 1,200 Hilton properties to HotelKey's Front Desk system and integrating it with major online travel agencies (OTAs) like Agoda, Airbnb, and Booking.com. Additionally, I have worked on integrating revenue management systems such as IDeaS, Duetto, and Revenue Analytics, as well as optimizing ETL (Extract, Transform, Load) processes to improve data handling efficiency. Through my work, I have come to appreciate the importance of agile methodologies, teamwork, and scalable architectures in the software industry.

The tech industry is one of the most dynamic fields, constantly evolving with new trends, frameworks, and paradigms. My professional experiences have not only enhanced my technical skills but also shaped my core beliefs regarding the role of technology in society. I firmly believe that technology should be developed with the intention of improving lives, solving real-world challenges, and fostering inclusivity. While AI and automation can optimize processes and drive efficiency, they should also be designed with ethical considerations, ensuring that advancements do not contribute to inequality or biases. Cultural values play a significant role in shaping how technology is perceived and implemented across different societies. For example, in data privacy-sensitive regions, technologies should prioritize security and transparency, whereas in developing nations, innovation should focus on bridging digital divides and making technology more accessible. This balance between technological advancement and cultural adaptability is something I strongly advocate for, both in my work and research.

As I navigate my master's program in Data Science and AI, my research interests continue to evolve. I am particularly intrigued by the field of Natural Language Processing (NLP), deep learning, and AI-driven decision-making systems. During my time at AIT, I aim to work on projects related to NLP, speech recognition, and AI ethics. My ultimate goal is to contribute to research that enhances AI's ability to understand human language with greater accuracy while minimizing biases in language models. Additionally, I am interested in exploring how AI can be used in automated anomaly detection, cybersecurity, and predictive analytics. This aligns with my career aspirations of working at the intersection of data science, AI, and cloud computing to build intelligent, efficient, and responsible AI solutions.

Despite my technical expertise and professional achievements, I remain a lifelong learner. The technology landscape is constantly shifting, and keeping up with the latest tools, frameworks, and methodologies is essential. In my role, I utilize IntelliJ, Postman, Charles, Jira, Confluence, and Visual Studio to streamline development workflows. I have worked with design patterns like Singleton, Factory, Builder, Observer, Adapter, Dependency Injection, and Repository to create scalable and maintainable architectures. Moreover, version control systems such as GitHub, Bitbucket, and TortoiseSVN have been integral to my collaborative development process. Testing is

another area I emphasize, employing JUnit for unit testing, integration testing techniques, and test-driven development (TDD) to ensure the reliability of software solutions.

One of the biggest challenges in my academic and professional journey has been managing time effectively. Balancing a full-time job as a Software Engineer with a rigorous master's program requires strategic planning, self-discipline, and prioritization. While the workload can be overwhelming at times, the experience has taught me resilience, adaptability, and problem-solving skills that extend beyond technical expertise. The transition from structured undergraduate education to self-driven research in a master's program has been an eye-opening experience, pushing me to think critically and explore innovative AI solutions to real-world problems.

Looking ahead, I am committed to furthering my knowledge and expertise in AI, software engineering, and cloud technologies. I envision myself contributing to groundbreaking AI applications that revolutionize industries while upholding ethical AI practices and inclusive technological development. As I continue my journey in data science and AI research, I remain excited about the endless possibilities that lie ahead and eager to make a meaningful impact in the ever-evolving world of technology.