

Muhammad Rayyan Khan

Karachi, PK. | [Linkedin](#) | +92 3353948811 | [Github](#) | khan_rayyan22sept@outlook.com | [Portfolio](#)

OBJECTIVE

AI/ML-focused Software Engineer skilled in Python-based machine learning frameworks, data preprocessing, and model deployment. Experienced with React.js for web and React Native for mobile development. Passionate about building real-world AI solutions in image processing, LLMs, and retrieval-augmented generation architectures.

EDUCATION

NED UNIVERSITY OF SCIENCE AND TECHNOLOGY (UIT)

Bachelors of Science in Software Engineering (BSSE)

2021 - 2025

- **Coursework:** Software Engineering Economics, Information Security, Cloud Computing, Object Oriented Programming, Data Structures & Algorithms, Artificial Intelligence, Machine Learning, Software Project Management, Software Quality Engineering, Calculus, Linear Algebra, Operating Systems, Probability and Statistics and Differential Equations.
- **Involvement:** IEEE Student Branch (UITU Chapter Member), Google Developer Students Club (Data Science Lead), Google Developers Group Kolachi (Volunteer).

WORK EXPERIENCE

XPACE Technologies Pvt. Ltd

Software Engineer (Artificial Intelligence Intern)

May 2024 - July 2024

- Developed a data-driven agriculture solution, considering soil minerals, humidity, temperature, and rainfall parameters.
- Contributed to the design and implementation of a chatbot system with rule-based responses, enhancing user engagement and interaction.
- Created an AI application capable of detecting and recognizing faces in images or videos, contributing to the advancement of facial recognition technology.
- Constructed an image captioning AI by utilizing computer vision and natural language processing technique.
- Developed ML-driven applications including fraud detection and NLP-based chatbot for customer support.
- Created APIs to integrate ML models into existing enterprise platforms, ensuring production-grade deployment and scalability.
- Collaborated with development teams to deploy solutions using Git and version control.

MICRO ELECTRONICS RESEARCH LABORATORY (MERL)

Trainer Internee (Summer Internship)

Sept 2022 - Dec 2022

- I was a Trainer Internee during my summer internship in MERL which is Pakistan's first research laboratory on microelectronics
- **Projects:** 5 Stage Pipelining, Single Cycle Implementation, Functional Programming.
- Worked on combination of technologies like Scala, Chisel, Verilog.

SKILLS:

Languages: Python, JavaScript, TypeScript, Java, HTML, CSS

Frontend: React.js, Next.js, Redux Toolkit, Context API, Tailwind CSS, Material UI, Styled Components, Framer Motion, Vue.js, Vanilla, Expo, Three.js, WebGL

Backend & APIs: Node.js, Express.js, REST APIs, GraphQL, Authentication (JWT, OAuth)

Database & Storage: MongoDB, PostgreSQL, MySQL, Firebase, AWS S3 and RDS

Cloud & DevOps: Git, GitHub, Vercel, Netlify, Docker, Kubernetes, Postman, AWS, CI/CD with Github Action

Machine Learning AI: ML algorithms, Data preprocessing, Model training & evaluation, TensorFlow, PyTorch, LangChain, RAG (Retrieval-Augmented Generation), LLMs, Generative AI, OpenAI API, Computer Vision, Image Processing.

Concepts: Responsive Design, Component-Based Architecture, API Integration, Authentication, Web Development, Cloud Technologies, UI/UX Design, Amazon Web Services, Software Development, Frontend Development, Agentic AI, Automation Workflows, LLM, AI Agent Design, AI Automation, AI Assistant, AI Chatbots, Prompt Engineering, Agile/Scrum.

PROJECTS:

JobAssistant.ai

AI Job Insight Assistant

- Designed and implemented a scalable SaaS web application using Next.js 15, React, and Tailwind CSS, with Clerk for authentication and Convex for real-time data and backend functions.
- Built multi-tenant user flows (signup, subscription management, usage tracking) and server-side routes for secure API calls and file/asset handling.
- Implemented content-generation features and a responsive dashboard that updates in real time; optimized builds and routing for fast first-load performance.
- Deployed the production app with continuous deployment and infrastructure configuration for reliability and automated scaling.

Managix

Cloud-based Project Management Application

- Built a full-stack project management application with Next.js, Node.js, Tailwind CSS, and PostgreSQL.
- Configured AWS Cognito for secure user authentication and AWS RDS for managed database hosting.
- Deployed backend services to AWS EC2, integrating RESTful APIs for project, task, and team management.
- Delivered an intuitive dashboard with role-based access control, real-time status updates, and responsive UI.

Neurocode

AI-Powered Code and Collaboration Platform

- Developed a full-stack AI web application using Next.js 15, Google Gemini AI, and Assembly AI for advanced content analysis and generation.
- Designed an interactive UI with Tailwind CSS, optimized for both desktop and mobile.
- Implemented secure authentication, session handling, and API integrations for seamless AI interaction.
- Deployed the application with a focus on scalability, security, and high availability.

CERTIFICATIONS:

Junior Software Developer

Amazon (Coursera - Professional Certification)

- Gained foundational skills in software development lifecycles, Java programming, object-oriented design, data structures, algorithms, databases, web development, and generative AI tools.
- Completed simulated real-world projects and capstone assignments.

Web Developer Bootcamp 2024

Udemy (Instructed by Colt Steele)

- Comprehensive full-stack web development course covering HTML, CSS, JavaScript, Node.js, Express, MongoDB, and deployment workflows.
- Built multiple real-world projects including RESTful APIs, responsive websites, and dynamic full-stack applications.

Full-Stack Software Developer

IBM, Microsoft, Meta (Coursera – Professional Certification)

- Gained industry-aligned skills in frontend (React, JavaScript), backend (Node.js, databases), cloud-native architecture, containerization (Docker, Kubernetes), CI/CD, and micro services.
- Involved building and deploying full-stack cloud applications with best practices in DevOps and security.

Software Engineering

Hong Kong University of Science and Technology (Coursera - Specialization)

- Covered methodologies and tools for planning, requirements gathering, software design, implementation, testing, and maintenance of large-scale systems.
- Applied software engineering techniques through hands-on, realistic development projects.