ARSAL ADNAN

AI Engineer | Agentic AI Developer | Full-Stack Developer

+92 321 520 0906 | arsaladnan07@gmail.com | linkedin.com/in/arsaladnan | arsaladnan08-one.vercel.app

Professional Summary

AI Engineer and Full-Stack Developer with **3+ years of hands-on experience** building AI-powered applications, autonomous agents, intelligent document processing systems, conversational AI platforms, and production-grade full-stack applications. Specialized in **Agentic AI, Large Language Models (LLMs), Generative AI, Retrieval-Augmented Generation (RAG), multi-agent orchestration, OCR/VLM systems, and AI automation**. Experienced with LangChain, LangGraph, FastAPI, OpenAI, Anthropic Claude, Ollama, PyTorch, TensorFlow, Docker, AWS, React, Next.js, Node.js, MongoDB, PostgreSQL, and WebSockets. Strong experience across the complete software development lifecycle, including system architecture, AI model integration, prompt engineering, tool calling, backend APIs, evaluation, automated QA, deployment, monitoring, and production optimization.

Technical Skills

- **AI & Generative AI:** Agentic AI, AI Agents, Large Language Models (LLMs), Generative AI, Multi-Agent Systems, LangChain, LangGraph, OpenAI API, Anthropic Claude API, Ollama, Prompt Engineering, Prompt Caching, Tool Calling, RAG, FAISS, NLP, Intent Classification, Named Entity Recognition
- **Machine Learning & Document AI:** PyTorch, TensorFlow, OCR, Vision-Language Models (VLMs), Intelligent Document Processing (IDP), Document Classification, Information Extraction, Field Extraction, Schema-Based Extraction, Document Understanding, Data Validation, Structured JSON Extraction
- **Backend & APIs:** Python, FastAPI, Flask, Node.js, Express.js, REST APIs, WebSocket, Socket.io, Pydantic, JWT, AsyncIO, ThreadPoolExecutor, Microservices, API Architecture, Backend Systems, Real-Time Processing
- **Frontend:** React.js, Next.js, TypeScript, JavaScript (ES6+), HTML5, CSS3, SCSS, Tailwind CSS, Flutter, React Native, Responsive Web Design
- **Databases:** MongoDB, MongoDB Atlas, PostgreSQL, SQL, Redis, Mongoose
- **Cloud & DevOps:** Docker, Docker Compose, AWS, Vercel, Render, Nginx, Gunicorn, Cloudflare Tunnel, SSL/TLS, CI/CD, Containerization, Cloud Deployment, Environment Configuration
- **Development Tools:** Git, GitHub, VS Code, Postman, Swagger/OpenAPI, Jupyter Notebook, Google Colab, PyCharm, Spyder, Figma
- **Programming Languages:** Python, JavaScript, TypeScript, C++, C#, SQL

Professional Experience

AI Engineer *2025 – Present*

Intercraft Pvt Ltd, Rawalpindi, Pakistan

- Designed and implemented autonomous **AI agents** for intelligent error detection, root-cause analysis, and automated code fixing using **LangGraph, LangChain, and LLMs**.
- Architected multi-stage autonomous QA pipelines covering **PRE-QA, BUILD-QA, and RUNTIME-QA**, enabling automated validation, runtime verification, error recovery, and self-healing workflows.
- Built production-grade **FastAPI** services supporting asynchronous processing, real-time monitoring, multi-user sessions, and scalable AI application workflows.
- Integrated **OpenAI, Anthropic Claude, and Ollama** models with LangChain and LangGraph to implement agentic reasoning and multi-agent orchestration workflows.

- Implemented **Anthropic prompt caching** to reduce repeated LLM input processing and optimize token consumption during large-scale application generation.
- Designed Docker-based isolated execution environments with automatic port management, process monitoring, failure recovery, and application lifecycle management.
- Applied **asyncio and ThreadPoolExecutor** for concurrent processing, improving AI workflow execution and deployment performance.
- Configured **Nginx, Gunicorn, SSL/TLS, and Cloudflare Tunnel** for secure HTTPS deployment and externally accessible production services.

Software Engineer *2024 – 2025*
Egeeks Global, Rawalpindi, Pakistan

- Developed and maintained full-stack web and enterprise applications using **Python, JavaScript, TensorFlow, MongoDB, and REST APIs**.
- Built AI and data-driven applications to automate business workflows, improve operational efficiency, and support intelligent decision-making.
- Designed backend services and RESTful APIs while contributing to frontend development, database architecture, testing, and deployment.
- Collaborated with cross-functional teams to translate business requirements into scalable software solutions and production-ready features.

Research Analyst *Aug 2024 – Sep 2024*
Egeeks Global, Islamabad, Pakistan

- Analyzed market and business data to support strategic decision-making and technical research initiatives.
- Developed structured reports and data visualizations to communicate research findings and improve internal reporting workflows.

Front-End Developer Intern *Sep 2023 – Oct 2023*
Internee.pk, Islamabad, Pakistan

- Developed responsive mobile interfaces using Flutter while applying component-based development and performance optimization practices.

Junior Developer Intern *Jul 2023 – Aug 2023*
The Worx, Islamabad, Pakistan

- Developed responsive web interfaces and reusable React.js components while improving website performance and maintainability.
- Applied frontend optimization and responsive design techniques to improve user experience across desktop and mobile devices.

Key Projects

PlanetOCR – AI-Powered Intelligent Document Processing Platform https://planetocr.ai/

Python, FastAPI, OCR, VLMs, LLMs, Intelligent Document Processing, Document Classification, Structured Extraction, REST APIs

- Built a full-stack **AI-powered OCR and Intelligent Document Processing (IDP) platform** combining multiple OCR and Vision-Language Model (VLM) engines for automated document understanding and extraction.
- Developed end-to-end IDP workflows for **document classification, field extraction, validation, document understanding, and structured JSON generation**.
- Implemented an AI-powered advisor that recommends the most suitable **OCR engine and processing tier** based on document characteristics and processing requirements.
- Designed support for **custom extraction schemas and dynamic field mapping**, enabling business-specific document data extraction.
- Built interactive live document testing and processing workflows allowing users to evaluate OCR and IDP performance across different engines.
- Developed **REST APIs** for integrating OCR and IDP capabilities with external enterprise applications and automated workflows.
- Designed the architecture for scalable, enterprise-oriented document processing and multi-engine AI workflows.

AI Chatbot Appointment Booking System https://chatbot-frontend-pwzz.onrender.com/

Next.js, React, TypeScript, Node.js, Express, FastAPI, LangChain, PostgreSQL, Socket.io, JWT, Docker

- Built a full-stack, **multi-tenant conversational AI platform** enabling patients to discover clinics and doctors, check live availability, book appointments, cancel bookings, and manage appointments through natural-language conversations.
- Developed a **LangChain tool-calling AI agent** with database-backed tools for clinic discovery, doctor lookup, schedule retrieval, availability checking, appointment booking, appointment retrieval, and cancellation.
- Architected a multi-service system using **Next.js, Node.js/Express, FastAPI, and PostgreSQL**, with the backend acting as an API gateway between the frontend and AI service.
- Implemented **real-time conversational communication using Socket.io/WebSockets**, supporting persistent chat sessions and live message updates.
- Designed **multi-tenant architecture and role-based access control** supporting patients, clinic administrators, and platform superadmins with clinic-scoped data access.
- Implemented JWT-based authentication, protected REST and WebSocket connections, schedule-aware availability checking, and conflict-aware appointment booking.
- Containerized the application using **Docker Compose** and structured the system as independently deployable frontend, backend, AI-service, and database components.

AI Fullstack Project Generator Agent https://aseyl.com/

Python, FastAPI, LangChain, LangGraph, Anthropic API, OpenAI API, FAISS, Docker

- Built an autonomous **multi-agent AI system** that generates production-ready full-stack applications from natural-language requirements.
- Implemented support for React, Vue, and Angular frontends with Express, Flask, Django, and FastAPI backend architectures.
- Designed multi-phase **PRE-QA, BUILD-QA, and RUNTIME-QA** workflows for automated validation, error detection, and self-healing.

- Automated application deployment using Docker Compose and optimized LLM costs through Anthropic prompt caching.

AI-Powered Customer Chatbot with Booking System

FastAPI, LangChain, RAG, MongoDB, LLMs

- Built an LLM-powered conversational booking system for hotels, buses, and tour packages with multi-turn conversation handling.
- Implemented **intent classification, entity extraction, conversational memory, and RAG-based knowledge retrieval**.
- Designed a guardrailed booking workflow to maintain structured, reliable, and context-aware interactions.

NumBuddy – E-Learning Platform https://numbuddy.vercel.app/

MERN Stack, MongoDB, JWT, bcrypt, RBAC

- Developed an adaptive mathematics learning platform with secure authentication, role-based access control, and personalized learning workflows.

Support Team Task Management App https://webmanagmenttaskegeeks.vercel.app/

Next.js 14, TypeScript, Tailwind CSS

- Built a real-time task management platform featuring countdown timers, idle detection, multi-task management, and Excel export functionality.

Chatreader API

FastAPI, OpenAI GPT-3.5, MongoDB, spaCy

- Developed a conversational API with persistent memory, intent classification, named entity extraction, and MongoDB-backed conversation state.

Payment API

FastAPI, OpenAI API, Pydantic, Swagger/OpenAPI

- Built an AI-powered payment-details extraction API using OpenAI models and structured Pydantic validation.

Employee Management System with Payroll https://d-care-drab.vercel.app/

MERN Stack, MongoDB Atlas, Vercel

- Developed an HR management platform supporting payroll processing, employee records, ledger tracking, and automated payslip generation.

Appointment Booking System https://hqc-web.vercel.app/

MERN Stack, MongoDB, Vercel

- Built a full-stack appointment scheduling platform with date-time scheduling, form validation, and responsive UI.

Claim Fighter https://claimfighter-ldnw2.sevalla.app/

React, Node.js, Stripe

- Developed an insurance claim management platform with automated claim processing, payment integration, and claim tracking.

Orchestrated Recurring Coordination https://orchestrated-recurring-coordination.vercel.app/

Next.js, TypeScript, PostgreSQL

- Built an enterprise workflow orchestration platform for coordinating recurring tasks, processes, and operational workflows.

Project Estimator https://project-estimator-alpha.vercel.app/

React, Next.js, OpenAI API

- Developed an AI-powered project estimation system that generates timeline and cost estimates from natural-language project requirements.

D-Care System https://d-care-drab.vercel.app/

MERN Stack, JWT

- Developed a healthcare management platform supporting patient records, appointment scheduling, authentication, and telemedicine workflows.

PubMed Research Platform https://pubmed-livid.vercel.app/

React, TypeScript

- Built a biomedical literature research platform supporting research article discovery, search, and recommendation workflows.

ClovApp https://clovapp.vercel.app/

React Native, Firebase

- Developed a cross-platform mobile application with Firebase-backed real-time data synchronization and community engagement features.

Voca Voice Translator https://voca-voice-translator.vercel.app/

React, Speech-to-Text API, Translation API

- Built a real-time voice translation application combining speech-to-text, translation, and voice interaction APIs.

Education

Bachelor of Science in Computer Science (BS-CS) *Aug 2020 – Aug 2024*
Bahria University, Islamabad

Certifications

- AWS Cloud Architecting – Amazon Web Services
- AWS Cloud Developing – Amazon Web Services

- Introduction to Generative AI – Google
- Front-End Development – Meta (Coursera)
- Introduction to Figma – Google / Coursera
- Introduction to WordPress – Coursera