

Syed Owais Ali Shah

Karachi, Pakistan | aishahowais@gmail.com | [Linkedin](#) | [Github](#) | [Portfolio](#) | +92 327 3643868

EXPERIENCE

Ehsaan Tech

Software Engineer

July 2025 - Present

- Architected and delivered 15+ developer-facing REST APIs using NestJS and TypeScript, supporting scalable lead management and AI-assisted workflows used across multiple internal services.
- Engineered secure role-based access control and user management systems backed by relational databases, enforcing constraints and indexed queries to strengthen platform reliability and reducing onboarding issues by ~30%.
- Orchestrated AI-driven CRM workflows (QaulAI) via backend services, defining relational schemas and optimized SQL queries to ensure data consistency across 3+ services and reduce manual reconciliation efforts by ~40%.
- Integrated Stripe billing pipelines enabling automated invoicing, secure transactions, and subscription management
- Built Python-based data ingestion and preprocessing pipelines using iCrawler, processing 10k+ images to support ML experimentation and backend feature validation.

Linux Foundation - LFX Mentorship Program

Software Engineer

Apr 2025 - July 2025

- Streamlined onboarding and developer experience for the RISC-V Unified Database by configuring Devcontainers and validating environments, reducing setup time by 40%..
- Debugged and optimized complex RISC-V infrastructure codebases, increasing CI reliability and module-level test coverage by 30%.
- Designed a scope-based pretty-printer for .idl files using AST traversal; shipped as a CLI tool adopted across 3 repositories by 10+ contributors.

Micro Electronic Research Lab

Senior Research Intern

Aug 2022 - Nov 2024

- Engineered simulation and implimented testing frameworks, reducing RISC-V performance analysis time by 50%.
- Contributed to a GEMM accelerator project, improving matrix computation throughput by ~25% for AI/ML workloads.
- Specified and verified a single-cycle RISC-V processor in Verilog, achieving 95% testbench coverage using Cocotb.

SKILLS

Programming Languages: Python, Ruby, JavaScript, TypeScript, Yaml, Json, Java, C#, Scala, C/C++, Bash, HTML, CSS, Chisel, SystemVerilog

Backend System: Node.js, Express.js, Django, FastAPI, NestJS, RESTful API, Distributed System

AI & LLMs: Prompt Engineering, AI Agents, Vapi, Voice AI, RAG Concepts, LoraAI, LLM Integrations, Computer Vision, YOLO

Tools & Software: Git, GitHub, Docker, CI/CD, AI/ML, Rake, Linux, Devcontainers, Vivado, JWT

Databases: PostgreSQL, MongoDB, MySQL, SQLite, NoSQL, Supabase

Soft Skill: Communication, Team Collaboration, Conflict Resolution, Leadership, Project Prioritization

PROJECTS

Qaulai(AI Receptionist) | EhsaanTech

- Created scalable backend services in NestJS to manage AI-powered voice agent leads, defining SQL schemas and queries to reliably handle 1k+ webhook events per day.
- Integrated VAPI webhooks to ingest, store, and update real-time voice bot call data, improving observability and automation.
- Deployed secure APIs for lead retrieval, updates, and access verification to support multi-tenant usage across 5+ client accounts.
- Tech Stack: NestJS, Vapi AI, MySQL, Git
- Project Link: [qaulai](#)

Avetics Drone Inspection Platform | Ehsaan Tech

- Replaced the existing Azure Custom Vision solution with a YOLO-based object detection pipeline, improving model flexibility, maintainability, and inspection accuracy for drone-captured imagery.
- Implimented backend APIs for inspection workflows, image processing, and detection services using Node.js, enabling seamless integration between computer vision models and the web platform.
- Tech Stack: YOLO, Node.js, React, MongoDB, AWS, Playwright, Computer Vision
- Project Link: [inspect avetics](#)

conversion-to-TLV | RedwoodEDA(Steve Hoover) Project

- Collaborated on open-source tooling to automate Verilog-to-TL-Verilog conversion workflows.
- Authored Python automation scripts integrating LLMs to assist hardware translation, reducing manual debugging effort by ~70% across multiple conversion workflows.
- Focused on reproducibility, reliability, and developer productivity in AI-assisted tooling.
- Tech Stack: Python, LLMs, Yosys, Git
- Project Link: [conversion-to-TLV\(Github Repo Link\)](#)

More Projects

AI Applications: (CustomscapeAI, VoiceforgeAI, VoicePls, CallCenterAI), **Business Systems:** (ZamzamTrader, Lead Management CRM, EhsaanCRM, Jahania Poultry System, FamigliaDoro, UDB), **Research & Security:** (EnigmaChat, DRBG, Bitcoin Protocol Experiments), **RISC-V & Hardware:** (RISC-V UDB, NucleusRV, ChipSimX, MagmaSI), **Computer Vision:** (Football Analysis, Flightvault).

EDUCATION

NED University

Nov 2021 - July 2025

Bachelor of Science in Software Engineering

Hacktoberfest Participant (2022 & 2023): Contributed multiple pull requests, enhancing collaborative development skills.