

ARHAM AQEEL

Full-Stack Builder & AI Engineer | Trichy, India

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EDUCATION

- National Institute of Technology Tiruchirappalli** Aug 2022 – Present
B.Tech in Mechanical Engineering | Coursework: Data Structures, Algorithms, Statistics, Systems Design, CFD, Finite Element Analysis

SKILLS

- AI & ML:** TensorFlow, scikit-learn, XGBoost, FAISS, Sentence-Transformers, Gradio, Ollama, RAG, NLP, SMOTE, Neural NCF
- Full-Stack:** Python, TypeScript, JavaScript, Next.js, React, Tailwind CSS, Firebase, Firestore, Supabase, REST APIs
- Infra & DevOps:** Docker, Vercel, Netlify, Cloudflare Tunnel, Git, Zapier, Google Sheets API, Linux Command Line
- Data & Analytics:** Pandas, NumPy, Matplotlib, Seaborn, SQL, PCA, K-Means, Jupyter, A/B Testing, Multi-channel sensing

PROJECTS

- Self-Hosted AI Workstation & LLM Infrastructure** Mar 2026
 - Architected and deployed a self-hosted AI environment running 10+ open-source LLMs (Llama 3, Mistral, Phi-3) locally on an NVIDIA RTX 4060, achieving 40+ tokens/sec inference at **\$0/month** recurring API costs.
 - Unified local models and cloud APIs (Groq, OpenRouter) into a single Open WebUI frontend, dynamically optimizing API routing to balance cost efficiency and enterprise-grade latency across diverse prompt types.
 - Configured Cloudflare Tunnels to securely expose the local environment to the public web with HTTPS encryption, implementing custom guest access controls and zero-trust authentication protocols.
 - Automated the entire full-stack startup sequence—including model loading, database hydration, and network tunneling—using a custom .bat script, reducing environment configuration time to a single click.
- ThriftX — Full-Stack P2P E-Commerce Marketplace** Jan–Mar 2026
 - Solo-developed an end-to-end peer-to-peer e-commerce marketplace utilizing Next.js, React, and Tailwind CSS to deliver a highly responsive, mobile-first frontend experience tailored for Gen-Z users.
 - Engineered a scalable backend architecture leveraging Firebase Auth for secure session management and Firestore for real-time NoSQL data syncing across thousands of dynamic product listings.
 - Designed comprehensive seller onboarding workflows, product listing quality standards, and automated image optimization pipelines to ensure a consistent and premium visual aesthetic across the platform.
 - Implemented a robust dispute handling system and order tracking mechanisms from scratch to maintain marketplace trust, safety, and reliable peer-to-peer transactional integrity.
- AI Book Recommendation Engine** Feb 2026
 - Built a hybrid multi-model recommendation system combining Collaborative Filtering, SVD Matrix Factorisation, Neural NCF, and FAISS NLP semantic search, trained extensively on a dataset of 7M+ user ratings.
 - Engineered the vector search pipeline utilizing Sentence-Transformers to map complex book synopses into high-dimensional embeddings, significantly improving semantic retrieval accuracy over baseline TF-IDF methods.
 - Deployed the underlying models via a live Gradio web application, enabling real-time personalised inferences and allowing users to perform side-by-side multi-model query comparisons dynamically.
- Telecom Churn Analysis — Full ML Pipeline** Jan 2026
 - Developed an end-to-end machine learning pipeline utilizing Python and scikit-learn to predict customer churn and identify attrition drivers on an imbalanced dataset of 15,000 Indian telecom customers.
 - Trained and exhaustively hyperparameter-tuned a soft-voting ensemble model (Gradient Boosting, Random Forest, Logistic Regression) to achieve an AUC of 0.76, outperforming standalone classifier baselines.
 - Segmented high-risk customer personas using K-Means clustering and PCA dimensionality reduction, flagging an estimated **Rs. 4.77 Crore** in annual revenue at risk, and deployed an automated HTML reporting dashboard.

PROFESSIONAL EXPERIENCE

- Research Intern — Fluid Dynamics Lab (FE2B), IIT Delhi** May–Jul 2025
 - Engineered custom Python data pipelines to post-process raw Particle Image Velocimetry (PIV) data, computationally extracting highly detailed velocity and vorticity field maps across 500+ experimental test frames.
 - Designed, calibrated, and optimized an experimental physical setup specifically targeting fluid energy extraction from autorotating flat plates, managing multi-day test runs to ensure absolute data integrity.
 - Analyzed complex fluid behaviors, synthesized quantitative findings, and contributed heavily to lab research documentation focusing on energy extraction efficiency at varying angles of attack.
- Digital Marketing Intern, Blink Digital, Mumbai** Mar–May 2025
 - Managed paid user acquisition campaigns across Meta Ads and Google Ads for 3 e-commerce clients, taking full ownership of A/B testing, creative briefs, audience targeting, and daily budget pacing.
 - Engineered multiple Zapier automation pipelines integrating lead capture forms, Google Sheets, and triggered email follow-ups, successfully eliminating 8+ hours per week of manual data entry and routing.
 - Developed robust Python scripts utilizing API integrations for automated cross-channel campaign reporting, dramatically reducing dashboard generation and turnaround time from 2 days to under 2 hours.