# Asadullah Ahmad

ICPC 2026 Silver Medalist
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## Education

**BS Computer Science, Punjab University College of Information Technology (PUCIT)** 2023 – Present
CGPA: 3.68

## Skills

**Languages:** C, C++, Java, Python, JavaScript, Kotlin
**Web Technologies:** HTML, CSS, React, Spring Boot, FastAPI, Flask, REST API
**DevOps & Messaging:** Docker, Kubernetes, RabbitMQ, Redis, Celery
**Databases:** SQL, MongoDB, Supabase, Firebase, Qdrant, Vector Databases, Graph Databases
**AI/ML:** LangChain, LangGraph, LLMs, NLP, RAG, Agentic AI, Prompt Engineering
**Tools & Platforms:** Git, Grep, LangFuse, LogFire, Google Cloud, Figma, Jira
**Competitive Programming:** LeetCode 650+, Strong DSA & Algorithms

## Experience

**AI/ML Intern** Jun 2026 – Aug 2026
NetSol Technologies, Lahore

- Built an AI-powered chatbot using **LangChain** and **LangGraph** for multi-step conversational workflows.
- Fine-tuned a **YOLOX-S** model for signature detection, cutting the company's verification work from **7 days to 2 seconds**.
- Developed a **financial ratios extraction agent** with LangGraph, pulling cash, debt & cash-flow metrics at **100% accuracy** and reducing analysis time from **4 days to 10 seconds**.
- Containerized and deployed AI services with **Docker** on **Google Cloud Platform**, collaborating cross-functionally to ship features to production.

**Teaching Assistant** Jan 2025 – May 2026
PUCIT, Lahore

- **DSA** (Jul 2025–May 2026): Mentored students in DSA, competitive programming, and problem solving.
- **OOP** (Sep 2025–Jan 2026): Guided students in OOP concepts, design principles, and project evaluations.
- **Linear Algebra** (Jan 2025–May 2025): Supported students in vectors, matrices, and mathematical foundations.

## Projects

**Pixora** GitHub | Live Demo
Built an image-to-search multimodal RAG platform with FastAPI and Next.js, using Google Gemini Vision for image understanding, Pinecone for vector search, and Tavily for real-time web-augmented streaming answers.

**Lumio** GitHub | Live Demo
Full-stack AI learning platform (Next.js, FastAPI, MongoDB, Gemini API) with JWT/Google OAuth, AI-generated adaptive quizzes, real-time leaderboards, analytics dashboards, and role-based access control.

**BaatKaro** GitHub | Live Demo
Production-grade multimodal AI assistant (Next.js, FastAPI, LangChain, Docker, MongoDB Atlas, GCP Cloud Run) with RAG, Face ID auth, streaming chat, speech-to-text/TTS, FAISS search, and Gemini+Groq fallback.

**Signature Detector – YOLOX-S** GitHub | Live Demo
Lightweight, production-ready signature detection API powered by a fine-tuned YOLOX-S model; converts PyTorch weights to ONNX for CPU-only inference (<50ms/page), fully containerized into a ∼200MB Docker image.

**Financial Ratios Extractor** GitHub | Live Demo
Financial analysis API extracting key ratios from company financial-statement PDFs (up to 35 pages), combining GREP for text extraction, Qdrant for retrieval, and Python for computations to generate accurate structured financial metrics.

**Shanakht** GitHub | Live Demo
Built an ID card information extraction system using OCR models to automatically detect and extract personal data fields from identity card images.

**Hybrid RAG System** GitHub
Hybrid RAG pipeline combining Neo4j knowledge graphs with dense vector databases, featuring hybrid retrieval, cross-encoder reranking, and context-aware LLM response generation.

**Huffman Encoding Visualizer** GitHub
Interactive Python tool visualizing Huffman tree construction, frequency analysis, and lossless compression with step-by-step animation.

## Certifications

- ICPC 2026 Silver Medalist