

Sunny Shaban Ali

Software Engineer • AI systems and geospatial data

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SUMMARY

- Shipped production AI before graduating: agentic test generation, long-term agent memory, and MCP connectivity
- Delivered EUR 60K annual savings, platforms serving 2.5K+ users, and 126 bug fixes in one company-wide sprint
- Two first-author papers accepted (IEEE IBCAST, ICONICS), HackOps'25 1st Runner-Up, and Golden Key top-intern award
- Ranked 1st in batch 3x at 3.75 CGPA; upstream open-source contributor to an 880+ star Linux project

EDUCATION

FAST-NUCES, Karachi | **Bachelor of Science in Computer Science** Aug 2022 - Jun 2026

- **CGPA:** 3.75 / 4.0 | 3x Batch Topper, 3x Rector's List, 3x Dean's List
- **Relevant Coursework:** Quantum Computing, Artificial Intelligence, Information Retrieval and Security, Computer Networks, Operating Systems, Data Structures and Algorithms, Digital Transformation

EXPERIENCE

Astera Software | **Associate SWE** Jul 2026 - Present

- Co-architected an agentic AI pipeline for Centerprise WPF UI regression with a 5-engineer team, automating end-to-end test generation and validation across 60+ wizards; **eliminated manual QA**, now the default gate on every Centerprise build
- Engineered long-term memory for Centerprise AI agents: three-layer (atoms, scenarios, persona) system with background LLM fact extraction, similarity-based dedup, and hybrid pgvector + full-text retrieval; injects per-turn user context at **~20ms**
- Introduced external MCP server connectivity in Centerprise and Astera Studio, persisting credentials via vault at user and tenant scope with project-level binding; **eliminated per-project re-auth** and powered the downstream SignalR agent service
- Designed and built a Playwright UI regression suite for Astera Studio Web, covering **470 test cases** across 8 functional areas with parallel execution and auto-retry; reported 30 new bugs and cut post-deploy smoke testing from **hours to minutes**

Astera Software | **Trainee SWE** Mar 2026 - Jul 2026

- Benchmarked 4 load-testing strategies for the SignalR agent service and selected k6, authoring a custom xk6-signalr extension in Go with a JWT/CSV harness; mapped the safe-throughput envelope and cleared the service for production
- Built a Teams meeting-scheduling AI agent on Microsoft Graph APIs with AI skills for calendar, roster, and availability; offloaded timezone, conflict, and name-parsing to deterministic Python, keeping LLMs out of scheduling decisions
- Resolved 126 bugs in a company-wide sprint, including one root-cause fix that ended multiple recurring failures in Centerprise's critical job scheduler

10Pearls | **Java Full-Stack Intern** Dec 2025 - Feb 2026

- Developed a full-stack Java contact management app: Spring Boot REST APIs with PostgreSQL and JPA behind a React frontend; integrated SonarQube quality gates and cut response times **40%** through query optimization and caching

Dawlance - Subsidiary of Arçelik Türkiye | **SWE Intern** Jul 2025 - Aug 2025

- Built a real-time factory analytics platform (MERN + TypeScript) that **replaced legacy SAP and vendor systems**, streaming live PLC signals from shop-floor machines over WebSockets via Raspberry Pi (Rust, S7 protocol)
- Delivered **EUR 60K** in annual savings through automated breakdown detection, real-time alerting, and OEE/MTTR/MTBF dashboards (Redis, MongoDB aggregations) across 4 machines; named **Top Intern** and awarded the **Golden Key**

MazikGlobal Pakistan | **AI Intern** Jun 2025 - Jul 2025

- Built an AI fitness platform around a modular LangChain tool-calling agent (mood tracking, RAG-based Q&A, report generation, profile updates) with CNN-based real-time posture detection in TensorFlow at **94% accuracy**
- Shipped video-based workout-plan generation via FastAPI with a React progress dashboard; evolving MongoDB user summaries cut chatbot latency on repeat interactions

TECHNICAL SKILLS

Languages	Python, C#, C / C++, JavaScript, Go, Rust
AI and ML	PyTorch, TensorFlow, LangChain, MCP, RAG, YOLO v8, scikit-learn
Backend, frontend	.NET, Spring Boot, Node.js, FastAPI, React.js, PostgreSQL, MongoDB, Redis
DevOps, testing	Linux (NixOS, Arch), Git, Azure, Docker, Terraform, GitHub Actions, Playwright, k6, SonarQube, Grafana
Microsoft	Dynamics 365 CRM / FnO, Power Platform (Power Automate, Canvas Apps, Dataverse)

PROJECTS

- Floodline** | R&D FYP, live in 3 cities | [GitHub](#) | [Live](#)

Aug 2025 - May 2026

 - Built a geospatial ranking engine in Python (GeoPandas, Shapely, H3, OSMnx/NetworkX, DuckDB) scoring **0.1 km² hexagons** for flood responders from Copernicus EMS flood maps, OSM road routing, building footprints and GHSL population
 - Validated on Copernicus EMS damage grading across **6 floods on 4 continents**: the top 10% of hexagons hold **76%** of the damage vs 10% at random and never fall below 37% per flood (spatial block bootstrap, leave-one-flood-out tests)
 - Shipped an offline-first PWA (TypeScript, Vite, IndexedDB, service worker) backed by Supabase Postgres with row-level security, single-use invites and server-issued device IDs; **10 colluding phone pairs** left the top 10 unchanged
- Scribe** | **Open-Source Collaborative LaTeX Editor**

Apr 2026 - May 2026

 - Built a self-hostable, real-time alternative to Overleaf whose backend is a single Rust binary, replacing Overleaf Community's 8-container Docker stack with REST routes, a Yjs CRDT WebSocket hub and a Redis-backed multi-worker compile queue
 - Shipped an offline-first Tauri 2 desktop app with a bundled LaTeX engine, SQLite sync with three-way conflict resolution, and AI assist across 6 providers with AES-256-GCM-encrypted keys
- Enterprise Asset Smart Solution** | **Deployed Microsoft Power Platform App**

Jan 2026

 - Built an end-to-end asset management solution on Power Platform: QR-enabled Canvas App, Power Automate workflows cutting processing time 87% with 99.5% delivery, and Business Process Flows at 100% success over 75+ runs
 - Shipped a Teams-integrated asset chatbot (92% accuracy across 150+ queries) and compliance dashboards that cut audit preparation time 60%
- Jild** | **1st Runner-Up at HackOps'25** | [GitHub](#) | [Demo](#)

Apr 2025

 - Won **1st Runner-Up** for an AI skincare analyzer detecting acne and dark circles at **83.8% mAP@50** on a ~2k-image dataset, returning severity scores and matched product and routine recommendations
 - Deployed React + Tailwind frontend on Vercel with a Dockerized Flask inference service, Supabase, and Terraform IaC; CI/CD with SonarCloud, GitGuardian, and Dependabot held critical vulnerabilities at zero through release
- Coders Cup Registration Portal** | **Deployed PERN App** | [GitHub](#)

Nov 2024

 - Built ACM NUCES's contest portal (React + Tailwind on Azure) with multi-field validation and reCAPTCHA v2, handling **2,500+ users** and 900+ team registrations; shipped via GitHub Actions CI/CD and awarded Special Mention
- Automated Invoice Processor** | **Project with revenue** | [GitHub](#)

Dec 2023

 - Implemented an AI-powered OCR tool (Python, PyTesseract, PyQt5) parsing 100+ invoice formats at **93% accuracy**, cutting manual processing time **40%** through automated extraction and validation

LEADERSHIP AND COMMUNITY

- Microsoft Azure DB** | **Emerald Contributor** – Resolved 15+ community issues and improved the docs

Apr 2024 - Apr 2025
- ACM NUCES** | **Web Development Frontend Head** – Led team of 8 developers across 4 projects

Oct 2024 - Feb 2025
- Postman** | **Student Leader** – Conducted API workshops for 150+ students across universities

Apr 2024 - Dec 2024
- MongoDB** | **Subject Matter Expert** – Reviewed over 50 certification exam materials with 3 other SMEs

Jul 2024 - Nov 2024

PUBLICATIONS

- CutQ: What Works and What Doesn't for QAOA on Max-Cut** | First Author, with S. Zahid | Accepted at IBCAST and ICONICS 2026

Floodline: Ranking Where Flood Responders Are Needed | Accepted at IEEE IBCAST 2026

CERTIFICATIONS

Microsoft	Azure AI Fundamentals (AI-900)
MongoDB	Associate Developer
GitHub	Foundations
Postman	API Fundamentals Expert
IBM	Full Stack Software Developer, Data Analyst, Applied Data Science (Coursera)
IBM Quantum	Basics of Quantum Information, Quantum Machine Learning, Fundamentals of Quantum Algorithms
Harvard	CS50x Introduction to Computer Science, CS50P Programming with Python
Udemy	Build API Servers with Rust and Actix, Bug Bounty and Web Security Testing