Hassan Rehman

hassan0rehman@gmail.com · +91-84829-84869 · github.com/h55n · hssn.me · linkedin.com/in/hassan-rehman-h55n · Pune, India

Summary

Final-year B.E. AI & Data Science student (CGPA 9.86, 10.0 last semester) who ships production AI systems. 5x hackathon winner. 25 merged pull requests across 16 open-source projects. Work spans agentic memory, satellite-ML early warning, multi-agent safety platforms, and an empirical study of agent memory aimed at TMLR.

Open Source

- **25 merged PRs across 16 upstream projects** (GitHub-verified): kubernetes-sigs/headlamp; redhat-developer vscode-yaml, mapt, podman-desktop; kestra-io kestra & blueprints; mesonbuild/meson; category-labs monad-revm (Rust) & mera; tauri-apps/plugins-workspace; bitcoindevkit/bdk; sugarlabs/musicblocks; neatroots; repowise; webpack docs; ALwrity. 23 further PRs open or in review.
- Regression tests that fail before and pass after, signed-off commits, clean CI; several merged with no changes requested. **107 merged PRs on GitHub overall**, counting 82 across his own projects.

Experience

Software Development Engineer Intern · Bluestock Fintech *Feb – Apr 2026*

- Shipped the production corporate blog platform (Next.js 14 SSG/ISR, Node.js/Express, PostgreSQL, MongoDB, auth, CMS, SEO); cut p95 page-load ~40% with ISR tuning; Agile remote team, Git PR workflows, CI/CD.

Independent AI & Automation Consultant · elom *2025 – Present*

- One-person AI automation practice — discovery, proposals, delivery, support for freelance clients (NDA). Build lead on Nimmee's first product Lineage: business memory that drafts social content and ops for local businesses over WhatsApp (closed pilot).

Operations Management Intern · SalesMonk.ai *May – Nov 2025*

- Built internal reporting pipelines and dashboards for an AI-driven B2B sales platform; funnel and cohort analysis to surface operational metrics.

Projects

MNEME — Agent Memory Layer · Live · GitHub *Monad Blitz Pune — Winner*

- Production memory layer for AI agents: Fastify REST API on Render + Postgres/pgvector, semantic recall with a local embedder (zero API keys needed), 133 tests. Hosted MCP server verified end to end with Claude Desktop, Cursor and Windsurf; Python SDK; Chrome extension.
- Blockchain attestation on Monad EVM: SHA-256 batch attestation cuts per-memory gas ~90%; GDPR Art. 17 via on-chain deletion tombstones. v0.1.0 internal retrieval benchmark: 59/60 any@5.

SlopeSense — Landslide Risk Research Platform · Live · GitHub *Research stage*

- India-wide monitoring: 22 landslide-prone points across 19 states/UTs; hourly Open-Meteo ingest into Postgres via GitHub Actions; NASA LHASA model on IMERG rainfall + SMAP soil moisture.
- Frozen validation caught 18/28 held-out events (64% recall, 8% false-flag rate, AUC 0.853); scores labelled experimental and public alerts deliberately disabled until accuracy improves.

DeTalks — Multi-Agent Mental Wellness Platform · Live *Hack for Humanity Pune — 1st Prize*

- Dual-agent safety architecture: Disha (5-level triage, no-diagnosis guardrails) + Kavach (silent crisis monitor); crisis routing to Tele-MANAS 14416 / 112. Deployment-ready PWA, real auth + database, 18 tests. IEEE CodeBhoomi 2026 Top-10 National Finalist.

Asset Intelligence Copilot — Agentic Ops Chat · Live · GitHub *MLH × FlytBase Hack Day*

- Gemma 4 copilot over oil-field sensor/maintenance data with a deterministic data layer, cited answers, generative UI charts and per-user memory; public MIT repo, shipped inside an 8-hour hackathon.

fumii — AI Companion Desktop App · GitHub *Faraway Hackathon — Finalist*

- Tiered RAG memory (identity, episodic recall, 7-day emotional window) bounded into ~1,000-token context; multi-provider LLM abstraction; Electron 29 app.

RiverWatch — Satellite Anomaly Detection · GitHub

- Sentinel-1 SAR + Sentinel-2 NDWI change detection for illegal sand mining across 4 river hotspots; rolling 12-month baseline; anomalies-only evidence cards by design.

The Great Debates — Editorial Archive · Live

- 113 fact-checked historical debate pages with timeline and archive filters; classical editorial design; auto-deploys from a public repo.

Research

Empirical study of agent memory — private manuscript in preparation (TMLR target) *Oct 2026 – present*

- Controlled comparison of memory designs (dense / hybrid / notes / evidence-linked) on LoCoMo and LongMemEval with Qwen3 1.7B–8B readers; 34-paper literature matrix; abstention gate lifts correct refusals on unanswerable questions 9→17 of 20, reported with its costs and negative results.
- Side work: LoRA fine-tuning of Qwen-class models on free Kaggle GPUs — BANKING77 decision accuracy 0.24 → 0.93 with retrieval-augmented prompts; calibration transfers across unseen datasets.

Technical Skills

Languages: Python, TypeScript, JavaScript, SQL, Solidity · **LLM APIs:** OpenAI, Claude, Mistral, Groq, Ollama · **Databases:** PostgreSQL, Neo4j, MongoDB, SQLite
AI / ML: PyTorch (LoRA fine-tuning), LightGBM, scikit-learn, pgvector, RAG, MCP, Gemma / Qwen / Llama open models, Google Earth Engine, Sentinel-1 SAR, Sentinel-2, NASA GPM/SMAP
Frameworks: FastAPI, Fastify, Next.js 14, React 18, Node.js, Electron, Streamlit · **Infra:** Docker, GitHub Actions CI/CD, Celery, Redis, Alembic, Turborepo, Vercel, Render, Cloudflare Workers · **Blockchain:** Solidity 0.8, Hardhat, OpenZeppelin v5, Monad EVM, viem 2.x

Education

B.E. Artificial Intelligence & Data Science — Zeal College of Engineering & Research, SPPU *2023 – 2027*
CGPA 9.86 / 10 · 10.0 SGPA in the last semester · no backlogs

Awards & Certifications

Monad Blitz Pune — Winner (MNEME) · **Hack for Humanity: Pune — 1st Prize** (DeTalks, Sep 2026) · **IEEE CodeBhoomi 2026 — Top 10 National Finalist** (DeTalks) · **Faraway Hackathon — Finalist** (fumii) · **i-Hack Finalist**, IIT Bombay E-Summit '25 · **GDG Solution Challenge 2025**
Certifications: Google Cloud: Intro to Generative AI (2024), Responsible AI (2025) · Data Analyst 101 (2025) · NLP & Text Mining (2024) · UI/UX Design with ChatGPT (2025)