

Omer Hayat

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EDUCATION

New York University Abu Dhabi <i>B.S. in Computer Science</i> Minors: Applied Mathematics, Philosophy, Artificial Intelligence	Abu Dhabi, UAE <i>Expected May 2028</i>
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EXPERIENCE

Robotics and Machine Learning Research Assistant <i>iCAS Lab, New York University Abu Dhabi</i>	Aug. 2025 – Present <i>Abu Dhabi, UAE</i>
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- Designed and implemented a modular semantic-navigation stack for the Unitree Go2, spanning semantic memory, natural-language target resolution, safety validation, and ROS 2/Nav2 goal publication.
- Built a multimodal VLA training pipeline supporting generative SFT, NF4 QLoRA, official external splits, checkpoint/resume, prediction export, and provenance-preserving handoff into the lab's evaluation stack.
- Integrated the navigation system into the lab's ROS 2 stack; independent physical-robot testing achieved over 90% success across ~25 spoken-command trials, including chair and bag targets.

AdoptAI Fellow <i>AdoptAI, The Lombard Hill Group</i>	May 2026 – Jul. 2026 <i>Remote</i>
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- Built a reusable 12-sheet AI-adoption model using formulas and scripts to standardize three-year ROI, NPV, payback, break-even, and benefit-cost analyses for client engagements.
- Structured assumptions, calculations, and outputs into a repeatable workflow so AI investment scenarios could be updated and compared without rebuilding the analysis for each engagement.

Software Engineer Intern <i>Enrichly, Techstars '23</i>	Feb. 2025 – Jun. 2025 <i>Abu Dhabi, UAE</i>
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- Owned frontend engineering for an early production Next.js chatbot prototype in a three-intern team, building three core product flows and reusable UI foundations from scratch.
- Reworked the chatbot into a site-wide voice-enabled assistant, integrating a Hugging Face model and extending the product beyond its original standalone chat experience.
- Built a 15-scenario evaluation harness that surfaced DSM-5 grounding errors and hallucinations, providing concrete failure cases that informed safeguards and subsequent product revisions.

Data Analyst <i>CardPay, NIC LUMS</i>	Jul. 2023 – Aug. 2023 <i>Lahore, Pakistan</i>
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- Built a Python extraction, SQL-cleaning, and Tableau workflow to rank about 50 SMEs, replacing manual prospect research; 6 of the top 10 recommendations became clients during the internship.

PROJECTS

FailSpec <i>TypeScript, React, Express.js, Playwright, Git</i>	<i>OpenAI Build Week 2026</i>
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- Led architecture and integration in a three-person team for a local-first developer tool that converts bug reports into reproducible, evidence-backed Playwright regression tests.
- Built the investigation API and async execution pipeline across Codex analysis, isolated Git worktrees, controlled Playwright runs, persistence, and verification; hardened cross-platform execution with typed failure states and 286 automated tests.

Internship Monitor <i>Python, AsyncIO, SQLite, RAG</i>	
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- Built an async internship-intelligence pipeline processing 2,800+ live listings across 15 Greenhouse and Lever sources, with deterministic assessment of role fit, geography, season, graduation, language, and work authorization.
- Built an embedding and retrieval layer with structured model outputs and tool calling while keeping hard eligibility blockers deterministic and recording model, retrieval, and fallback provenance.
- Built a 70-case human-reviewed shadow evaluation system with no missed hard blockers; added SQLite state, bounded retries, source-health checks, idempotent notifications, and 221+ automated tests.

PitchMirror <i>Next.js, Fastify, FFmpeg, AWS, Amazon Bedrock</i>	<i>Amazon Nova AI Hackathon 2026</i>
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- Built and deployed a solo multimodal presentation coach that reduced thousands of video frames to five representative keyframes while generating structured feedback on voice, presence, and content.
- Engineered an async AWS workflow across S3, DynamoDB, Step Functions, ECS Fargate, Transcribe, and Bedrock, with idempotent execution, schema validation, JSON repair, and deterministic partial-report fallbacks.

TECHNICAL SKILLS & ACTIVITIES

Languages: C++, Python, TypeScript/JavaScript, SQL
Backend & Web: FastAPI, Node.js, Express.js, Fastify, React, Next.js, SQLAlchemy, PostgreSQL
Systems & Cloud: Linux, Docker, ROS 2, Git, Playwright, GitHub Actions, AWS (S3, DynamoDB, Step Functions, ECS Fargate, Bedrock)
ML & Data: PyTorch, scikit-learn, Hugging Face, PEFT/QLoRA, RAG, pandas, NumPy
Programs & Activities: AWS AI & ML Scholar (Future AWS AI Programmer); DeepLearning.AI ML Specialization; Founder, *The Epoch* - Newsletter with 500+ subscribers