Amna Hassan

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Summary

Final-year undergraduate student in Computer Science (CGPA 3.6/4.0) and Google Generation Scholar 2025–26 (Asia Pacific), recognized by Google for excellence in leadership, impact, and innovation in technology. I have participated in 30+ international hackathons as a participant, mentor, and judge, with numerous wins at renowned venues such as Harvard, Google, and Anthropic, and recognition for developing innovative, high-impact AI solutions across diverse domains. Over the past two years, I have voluntarily taught AI to 25,000+ learners in Pakistan, many from non-technical backgrounds, while also delivering workshops and talks in multiple areas of computer science. I have also led open-source projects at GirlScript Summer of Code, mentoring contributors and managing large-scale collaborative development. Alongside my academic and research experiences, I bring a proven record of leadership, adaptability, and global collaboration, and I am eager to contribute to advancing research in computer science at the doctoral level.

Education

University of Engineering and Technology, Taxila   **Sep 2022 - Jun 2026**
BS, Computer Science (GPA: 3.61/4.0)

Achievements

- **Google Generation Scholar 2025–26 (Asia Pacific Region) – Google:** Selected as one of the Google Generation Scholars for the 2025–26 academic year, awarded to top students across the Asia Pacific for excellence in computer science, leadership, and impact in technology.

- **IELTS High Achiever – IDP Pakistan:** Recognized at the *IDP High Achievers Ceremony 2025* in Rawalpindi for achieving an overall **Band 8.0** in the IELTS exam. Received a Certificate of Recognition from Humayun Bin Akram, IDP's Country Director for Pakistan and Egypt.

- **Top 50 Project Administrator Award - GirlScript Summer of Code:** Chosen as a project administrator for my open-source project SereniFy in a renowned program featuring over 42,000 contributors and only 200 project administrators. Ranked as the 18th best project administrator, my achievement was highlighted on their LinkedIn page, which has a following of 120K+.

- **Winner at Harvard University's CS50 Puzzle Day Twice:** Led a team that Won Harvard University's CS50 Puzzle day by solving 9/9 logical puzzles in years 2024 and 2025

- **Ranked among Top 98 teams in Google AI for Impact Hackathon APAC:** In Google AI for Impact hackathon, organized by Hack2skill platform, around 22,000 professional participated and 2000+ projects were submitted.
  My Project "Equalist" was aimed at making the internet more accessible for differently abled people by making a google chrome extension that gives screen reading options, brightness options also converts voice to sign language

- **Research Mentorship Scholarship:** Received a 4-month research scholarship to work under an assistant professor at UC Irvine and author my first research paper.

- **Finalist in ClauDe Hackathon (Stockholm, Sweden):** Secured 3rd position among 469 members with the project Gluco Guide, an app for diabetes management.

- **Top 9% in GMTK Game Jam 2024:** Ranked #1109 overall out of 35,000+ contestants with the game "Clever Pun Related to Capitalism", scoring #628 in style (4.07/5).

- **Finalist in Codess.cafe Hackathon:** Achieved 3rd position with SereniFy, an app providing personalized mental tranquility through journaling, breathing exercises, relaxing games, and AI-driven anxiety management.

- **Prime Minister Laptop Scheme Awardee:** Received a laptop for achieving a high GPA of 3.74 from the Higher Education Commission in Pakistan.

- **100% Merit Scholarship Recipient:** Awarded a full scholarship for outstanding grades at Punjab Group of Colleges during 11th and 12th grade.

- **Featured on a top tech podcast:** Invited as a guest on Cillers Podcast (World-Class Hackathons), where top tech professionals share their experiences in hackathons, new technologies, and software development practices.

Experience

GirlScript Summer Of Code | *Open Source Project Maintainer and Mentor*   **Oct 2024 - Present**
- Led SereniFy project for GirlScript Summer of Code Extended 2024, managing 32 contributors and resolving 77 issues.
- Created guided meditations, breathing exercises, and progress tracking features using Streamlit, integrated AI with Claude AI for personalized recommendations, enhancing user engagement and satisfaction
- Reviewed and merged 77 PRs, ensuring code quality and stability.

UC Irvine | *Student Researcher* **Apr 2024 - Jun 2024**
- Awarded a 4-month scholarship to be mentored by an assistant professor at UC Irvine to write my first research paper.
- Authored a project-based research paper on LLMs in Game Development. The work was featured on the professor's personal website, and he also wrote a blog post about it in his newsletter.

iCodeGuru | *Volunteer Moderator & Trainer* **May 2024 - Present**
- Served as a trainer in a large-scale Generative AI development course, teaching AI App Development to over 25,000 participants via live Zoom sessions (over 5 courses conducted).
- Led multiple workshops for underprivileged students on Data Structures & Algorithms, GRE preparation, AI Development, and International Scholarship Opportunities.

Sep 2023 - Present

Volunteer in Tech Communities | *Trainer, Guest Speaker*
- Selected twice as Section Leader for Stanford University's Code in Place course; taught Python to over 30 international students across 12+ hours of instruction.
- As Women in Tech Lead for the Google Developer Student Club (2023–2024), organized and led in-person workshop on game development basics, reaching 70+ students.
- Delivered a workshop on Meta Hacker Cup as a guest speaker at Taxillians Robotics and Automation Society, UET Taxila, enhancing students' understanding of competitive programming competitions such as Meta Hacker Cup
- Gave a 15-minute talk on game development basics to over 50 students as a guest speaker at Microsoft Learn Student Ambassadors Club, UET Taxila, sparking interest in game development

Cillers | *Speaker on International Podcasts* **Jan 2025**
- Participated in a podcast hosted by Per Lange, sharing insights from leading global tech companies to help listeners build better software systems
- Delivered a 1-hour talk on the Cillers Podcast (World-Class Hackathons), sharing strategies for winning hackathons, highlighting experiences from events like the Google AI for Impact Hackathon and Harvard's CS50 Puzzle Day, and outlining effective approaches for ideation, prototyping, and presenting, while advocating for a proven mentorship structure

Technical Skills

- **Programming Languages:** Python, Javascript, SQL, C#, C++, Java
- **Databases:** MySQL, SQL Server, Supabase, PostgreSQL, SQLite, MongoDB
- **Game Engine:** Unity Engine
- **Frameworks:** Langflow, ReactJS, NodeJS, Hugging Face, Streamlit
- **Libraries:** Numpy, Pandas

Research Work

- Amna Hassan.Automated Unity Game Template Generation from GDDs via NLP and Multi-Modal LLMs.A framework that automatically transforms Game Design Documents into functional Unity game templates using NLP and multi-modal LLMs.
- Amna Hassan, Ilsa Afzaal, Nouman Munib, Aneeqa Batool, Hamail Noor,.Fracture Detection in X-rays Using CNN with Transfer Learning Models.This study explores multi-regional fracture detection in X-rays using CNNs and transfer learning with EfficientNetB0, MobileNetV2, and ResNet50, achieving 96% accuracy on the FracAtlas dataset.

Presentations & Talks

ICHPER 2025 – International Conference on Health Professions Education and Research, Lahore, Pakistan| Poster Link
- Poster presentation (2025). Presented research paper *" Fracture Detection in X-rays using Custom CNN and Transfer Learning Models"* under the **AI & Health-Tech Innovation Submissions** track, showcasing a lightweight CNN framework and transfer learning models (EfficientNetB0, MobileNetV2, ResNet50) on the FracAtlas dataset achieving accuracy of 96%.

AI-Powered Research Tools with RAG, MindsDB and Streamlit, Aspire Pakistan | Talk Link
- Speaker of "Building RAG Systems for Research Insights" (2024). Delivered a hands-on session demonstrating a Streamlit app for querying CVPR 2024 papers using MindsDB, attended by 300+ active students.

Introduction to Deep Learning in Python, iCodeGuru | Talk Link
- Speaker of "Introduction to Deep Learning" (2025). Delivered a beginner-friendly workshop covering neural networks, activation functions, backpropagation, loss functions, and optimizers. Guided participants through a hands-on project on digit recognition using the MNIST dataset with TensorFlow and Keras.

Explainable AI in Python, iCodeGuru | Talk Link
- • Speaker of "Explainability in AI" (2025). Delivered an interactive session introducing the importance of interpretability in machine learning models, emphasizing trust, accountability, and ethical AI practices. Explained key concepts such as global vs. local explainability, model-specific vs. model-agnostic methods, and tools like SHAP, LIME, and permutation importance. Demonstrated practical examples in Python to help participants understand how to interpret model predictions effectively.

Cillers Podcast (World-Class Hackathons) | Spotify Link

- Invited guest speaker (Jan 2025). Delivered 1-hour talk on strategies for winning hackathons and AI prototyping..

Taxillians Robotics and Automation Society, UET Taxila | <u>Event Page</u>
- Guest speaker (2024). Conducted workshop on Meta Hacker Cup & competitive programming.

Microsoft Learn Student Ambassadors Club, UET Taxila | <u>Event Page</u>
- Invited speaker (2024). Delivered a talk on game development basics to 50+ students.

Google Developer Student Club, UET Taxila | <u>Event Page</u>
- Women in Tech Lead (2023–24). Organized & led a workshop on game development basics for 70+ students.

Cracking the IELTS: My Proven Tips & Strategies for Band 8+, iCodeGuru | <u>Talk Link</u>
- In this webinar (attended live by 100+ learners), I share exactly how I prepared for IELTS efficiently focusing on targeted practice, smart strategies, and the right mindset.

Projects

Equalist | <u>Project Link</u>
- Co-developed "Equalist," a Chrome extension that enhances web accessibility for deaf and blind users by integrating text-to-speech, real-time sign language conversion (ASL & Indian), multi-language translation, and AI-based content summarization
- Integrated Google APIs (Text-to-Speech, Cloud Translation, YouTube Data API) and leveraged MediaPipe, Gemini, and Jan AI for gesture recognition, summarization, and media processing.
- Improved access to educational content for disabled users through intuitive UI/UX and real-time assistive features, recognized among the top 98 projects at the Google AI for Impact Hackathon.

Falcon Songbird | <u>Project Link</u>
- Streamlined resume creation by developing a comprehensive application featuring an automated resume builder to generate tailored, ATS-compliant documents, along with a manual resume assistant to upload, refine, and enhance resumes.
- Facilitated skill development through the implementation of a course creator tool, utilizing Falcon AI LMs to enable users to improve professional skills via interactive, hands-on exercises tailored to their individual learning paths.
- Enhanced job matching by designing a scoring utility to evaluate resumes against job descriptions, providing users with feedback and actionable insights for optimization.

FlagShip Precision Care | <u>Project Link</u>
- Developed the FlagShip framework to enhance patient care for neurodegenerative disease patients through the propagation of 30 agents, enabling real-time observation of treatment outcomes and improving decision-making.
- Utilized MindSB for precision care assignments and integrated GPT Strawberry for outcome projections, allowing simultaneous predictions for multiple treatment scenarios and significantly increasing evaluation accuracy.
- Enabled physicians to avoid ineffective therapies for neurodegenerative disease patients by predicting treatment outcomes, thereby reducing unnecessary costs and facilitating a more personalized and efficient healthcare approach.

Clever Pun to Capitalism | <u>Project Link</u>
- Ranked in the top 9% out of 35,000+ contestants and 7000+ Submitted Games in GMTK Game Jam 2024 (#1109 overall), with our 2D hand-crafted game "Clever Pun Related to Capitalism" scoring #628 in style (4.07/5); contributed to game concept, custom art, and music.
- worked as Unity Programmer, managing all game menus and guiding first-time Unity users, streamlining the development process and supporting team success with 42 ratings from participants.

Gluco Guide | <u>Project Link</u>
- Developed an innovative app designed to help patients manage diabetes by offering personalized recipes and exercise recommendations based on current sugar levels.
- Used Claude AI to generate responses and Streamlit to make the front end of the app.

Paul Graham Founder Mode AI App | <u>Project Link</u>
- Built an AI-powered life coach app that simulates Paul Graham's candid and insightful advice by drawing on his iconic essays.
- Implemented MongoDB Atlas for essay storage and vector search, OpenAI embeddings for semantic similarity, and ElevenLabs for voice synthesis.
- Developed the front end in Streamlit, offering users witty, edgy, and tailored responses for startup guidance and life advice.

Thread-safe Hash Table with CUDA | <u>Project Link</u>
- Implemented a high-performance, thread-safe hash table using GPU parallelism and CUDA atomic operations for concurrency control.
- Designed lock-based synchronization to handle insert, delete, and retrieve operations efficiently.
- • Built an animated visualization in Python (matplotlib + networkx) to demonstrate hash table operations step by step.