

# Safia Faiz

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## Achievements

- Guided **over 300** PEC-registered engineers in creating real-world engineering applications using **Generative AI**. ([Post](#))
- Achieved **Distinction**, placing within the **top 16% of 152 students** in my batch.
- Solved **9/9 puzzles** in **CS50x Puzzle Day 2025**, a logical puzzle competition conducted by **Harvard University**. ([Certificate](#))
- Received the "**Best Use of CAMEL-AI**" award at the **Fall In Love With DeepSeek Hackathon** by [Lablab.ai](#). ([Post](#))
- Achieved an **IELTS Academic** overall band score of **7.5** (L: 8.5, R: 7.5, S: 7.5, W: 6.5). ([Test Report](#))
- Solved **40+** LeetCode problems while **mentoring** beginners in programming and problem-solving. ([Course Playlist](#))

## Education

**NED University of Engineering and Technology** ([Website](#))

Karachi, Sindh, PK

**Major:** Bachelor of Engineering - Computer Systems

Oct 2020 - Aug 2024

**CGPA:** 3.829/4.000

**Minor:** Computer Vision, Project Management, Machine Learning

## Work Experience

**DreamBig Semiconductors Inc.** ([Website](#))

Onsite - Karachi, Sindh, PK

*Jr. Hardware Engineer*

Aug 2024 - Jan 2025

- Technology Stack:** SystemVerilog, UVM, AMBA AXI4 & ACE5-Lite protocols, Git, Linux, ModelSim, CXL Verification IP.
- Conducted block-level and full data path chip-level verification using UVM and specified protocols.

*Trainee Hardware Engineer*

Jun 2024 - Jul 2024

- Trained in RTL design (sequential & combinational circuits, FSMs) and UVM fundamentals, including UVM environment building for a dummy block.

**Data Science Dojo** ([Website](#))

Remote - Karachi, Sindh, PK

*Analytics Content Engineer Intern*

Feb 2023 - May 2023

- Developed learning content and assessments from technical specs with team collaboration. ([Sample Work](#))
- Researched trends in Data Analytics, Data Science, ML, and AI.

## International Competitions & Hackathons

**Gen AI Intensive Course Capstone - Kaggle, Google** ([Website Link](#))

*Project: IELTS Academic Writing Chatbot* [[Code](#) | [Article](#)]

- Developed an AI-powered IELTS Writing Assistant using **Gemini 1.5 Flash** and **ChromaDB** to deliver band score predictions, personalized feedback, and high-scoring sample answers through **few-shot prompting**.
- Integrated memory retrieval using **SentenceTransformers** and **ChromaDB** to compare user inputs with previous attempts and generate context-aware feedback.
- Designed a clean and user-friendly **Gradio** interface with interactive features including task selection, structured feedback toggles, and Markdown-rendered outputs.

**California Informatics Competition** ([CALICO](#)) **Spring 2025**

- Secured 393rd out of 820 teams globally in UC Berkeley's CALICO 2025, demonstrating real-time algorithmic problem-solving under pressure.

**AI for Connectivity Hackathon II: Building Resilient Networks** - [Lablab.ai](#)

*Project: Smart Network Resource Allocation* [[Submission](#) | [Code](#) | [Certificate](#)]

- Built a real-time SDN-based network management tool with ML-driven bandwidth prediction using Facebook **Prophet** and **anomaly detection** via the **IQR** method.
- Designed energy-efficient, dynamic routing with **NetworkX** and developed a **Streamlit** dashboard for real-time

visualization and monitoring.

## ULEFUSA - APTECH Generative AI Hackathon

Project: *Tiny Triumphs Tracker - An AI-Powered Child Development Milestone Analyzer* ([Code](#))

- Developed an AI-driven app using **FAISS**, **Sentence Transformers**, and a fine-tuned **Llama-3.3-70B** model via **Groq** API for milestone analysis.
- Created a custom **RAG dataset**, built a user-friendly **Streamlit** interface, and automated PDF report generation with ReportLab.
- Delivered early growth assessments to support parental decision-making with structured, actionable insights.

## Fall In Love With DeepSeek Hackathon - [Lablab.ai](#)

Project: *AI-Powered Personal Finance Assistant* [[Submission](#) | [Code](#) | [Certificate](#)]

- Built a smart budgeting app using **Streamlit**, **PyMuPDF**, and **Deepseek V3** (via AI/ML API) to analyze spending habits from PDFs.
- Automated expense categorization using the 50/30/20 rule and zero-based budgeting, with AI-driven savings recommendations and overspending alerts.

## [M\(IT\)<sup>2</sup>](#) Winter Tournament 2025

- Participated in the Beginner round of this coding competition, gaining experience in problem-solving and tackling new challenges. ([Post](#))

## Volunteer Experience

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### Pakistan Engineering Council ([PEC](#))

Course Instructor

Apr 2025

- Contributed as a volunteer instructor in Cohort 2 of the PEC Generative AI Training Program.
- Delivered hands-on sessions to 300+ PEC-registered engineers, covering the fundamentals of Generative AI and guiding participants in building their first Python-based AI applications from scratch. ([YouTube Playlist](#))
- Focused on simplifying core concepts and enabling engineers to apply AI in real-world, domain-specific scenarios.

### The CIS Community, NEDUET ([LinkedIn Page](#))

Co-Founder

Mar 2024 - Present

- Launched a student-led initiative fostering academic, career, and international education guidance for CIS students and alumni.
- Built a mentorship ecosystem connecting current students with successful CIS alumni.
- Spearheaded sessions on GPA improvement, career planning, and master's application strategies.
- Designed and implemented a centralized registration system to streamline student onboarding.
- Led Q&A forums, resource curation, and personalized mentorship support, contributing to a culture of shared growth and expertise.

### IELTS Guide ([LinkedIn Post](#))

- Provided **500+ individuals** with a **free one-month IELTS Academic prep guide**, helping them improve their scores.

### iCodeGuru ([Website](#))

Course Moderator

Apr 2025

- Moderated a course on LeetCode patterns, teaching underprivileged students through live sessions to strengthen their DSA foundations for interviews and competitive programming. ([Course Playlist](#))

Moderator

Mar 2025

- Moderated awareness sessions on **Code in Place** ([Poster](#)), **CS50x Puzzle Day** ([Poster](#)), and **CALICO** ([Poster](#)) coding competition in collaboration with MSLA SZABIST Islamabad.

Guest Speaker

Feb 2025

- Shared IELTS Academic exam structure and personal tips with underprivileged students. ([Webinar Link](#))

### Google Developer Groups on Campus - NEDUET ([Website](#))

Core Team Lead - Marketing ([Certificate](#))

Sept 2023 - Jul 2024

- Conducted interviews to recruit members for the marketing team. ([Post](#))
- Managed social media handles and optimized content for better reach.

- Organized and promoted online and onsite sessions on tech stacks like Gemini, SOLID, Web Development, and Software Licensing. ([Post](#))

Core Team Member - Marketing ([Certificate](#))

Nov 2022 - Sept 2023

- Promoted online tech sessions (such as Web3) through social media and community engagement.

### Brand Ambassador for Multiple Events

[PROCOTM 2023](#) ([Certificate](#))

Feb 2023

- Recruited over 20 participants in this mega event's CS and General competitions module.

ENVISION'22 by [IEEE NEDUET Student Branch](#) ([Poster](#))

Nov 2022

- Recruited 32 participants for the programming competitions module of this mega event.
- Performed basic data analysis on Google Sheets to conduct forensic analysis and determine which university had the highest student participation.

[NASA Space Apps Challenge 2022](#) ([Poster](#))

Oct 2022

- Recruited 60-65 participants single-handedly, inside and outside NEDUET premises.

## Projects

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### Urdu Image Captioning System with Auditory Aid for Visually Impaired

Final Year Design Project (FYDP)

- Objective:** Developed an AI-powered system for generating Urdu image captions for random images and converting them into audio, enhancing accessibility for visually impaired individuals.
- Technologies Used:** Python, TensorFlow, PyTorch, Transformers, CNNs (Xception, YOLOv8), LSTMs, GRUs, Streamlit (for UI), MS COCO & Flickr30k (translated these datasets to Urdu).
- Key Contributions & Results:** Developed transformer-based and encoder-decoder models for Urdu captioning, trained and fine-tuned models with BLEU evaluation, integrated text-to-speech for audio captions, handled data preprocessing including image collection and annotation, and Urdu translation, assisted in frontend development, and improved caption accuracy with applications in education, healthcare, and e-commerce.

## Technical Skills

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- Languages:** Python, Verilog, SystemVerilog
- Data Analysis:** NumPy, Pandas, Matplotlib, pyplot, Seaborn, Plotly, MS Excel
- Frontend:** Streamlit, Gradio
- AI & ML:** Scikit-Learn, Keras, Tensorflow, ANN, OpenCV, CNN, RNN, Transformers, LLM, RAG, AI Agents
- Hardware:** FPGA (Xilinx), UVM
- Version Control:** Git, GitLab, GitHub
- IDEs:** VSCode, PyCharm, Jupyter Notebook, Google Colab, MATLAB, ModelSim, Vivado

## Certifications

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- Data Analyst with Python – DataCamp ([Certificate](#))
- Python for Everybody Specialization – University of Michigan (Coursera) ([Certificate](#))
- Introduction to Python for Data Science – Data Science Dojo ([Certificate](#))
- ULEFUSA - APTECH Generative AI Training ([Certificate](#))
- 5-Day Gen AI Intensive Course – Kaggle, Google ([Certificate](#))