UET October Internship Program 2025 (Cycle-2)

Mid-Term Progress Report

Organized by: National Centre of Artificial Intelligence (NCAI), UET Lahore
Duration: 1st October – 30th November 2025
Report Date: 1st November 2025

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1 Program Overview and Introduction

The **October Internship Program 2025 (Cycle-2)**, organized under the **National Centre of Artificial Intelligence (NCAI)** at the **University of Engineering & Technology (UET) Lahore**, has successfully reached its **mid-term milestone** as of **1st November 2025**. This fully-sponsored initiative—made possible through the generous and continued support of UET alumni from the **66-UET and 67-UET batches**—reflects the strong bond between the alumni community and their alma mater, and their shared commitment to empowering the next generation of engineers, technologists, and digital innovators.

The internship aims to **bridge the gap between classroom learning and real-world industry practices** by providing students with a structured, hands-on learning environment where theory meets application. Over the years, this alumni-supported model has evolved into one of UET's most impactful student-development initiatives—one that integrates skill enhancement, professional mentorship, and applied research experience within a collaborative academic setting.

A total of **60 students**, carefully selected through a competitive process, are enrolled in **six high-demand technology domains**, each reflecting emerging trends in the global digital economy. These include:

1. **Generative AI** – exploring the power of large language models, prompt engineering, and multimodal creativity;
2. **Artificial Intelligence (AI)** – focusing on data analytics, supervised learning, and predictive modeling;
3. **Cyber Security** – emphasizing ethical hacking, network defense, and data-protection practices;
4. **Game Design & Development** – covering Unity-based 2D/3D game creation, animation, and storytelling;
5. **Graphics Designing & 2D Animation** – nurturing design thinking, brand identity, and motion-graphics expertise;
6. **Digital Media Marketing & Entrepreneurship** – building entrepreneurial and communication skills through SEO, content strategy, and business branding exercises.

Each track follows a **blended learning structure** comprising theoretical instruction, guided laboratory sessions, and project-based assignments. Interns spend approximately **20 hours per week**—with 5 hours devoted to concept learning and 15 hours to hands-on work under the supervision of experienced instructors and domain coordinators. Weekly progress reviews, peer evaluations, and milestone presentations ensure consistent improvement and accountability throughout the internship.

The first half of the program has demonstrated **encouraging results**. Interns have successfully completed foundational modules in their respective domains, initiated proof-of-concept (PoC) projects, and participated in collaborative exercises designed to develop creativity, problem-solving ability, and teamwork. The program's unique structure has allowed students from diverse disciplines to exchange knowledge, interact across domains, and learn from mentors drawn from both academia and industry.

This **Mid-Term Progress Report** presents a detailed overview of the work completed so far, highlighting **domain-wise activities, student engagement, and ongoing project development**. The next phase will emphasize **capstone projects**, final assessments, and preparation of professional portfolios for presentation at the **closing ceremony**.

The final comprehensive report—featuring consolidated results, project evaluations, and success stories—will be released at the **conclusion of the program on 30th November 2025**.

The October Internship Program stands as a **model of alumni-driven educational collaboration**, proving that the synergy between UET's academic leadership and its global alumni network can directly enhance the quality, reach, and relevance of engineering education in Pakistan.

2 Midterm Reports (Domain-Wise)

2.1 Generative AI

Instructor: Ms. Ayesha Azam
Assistant Coordinator: Ms. Asma Fatima

The Generative AI domain has completed the foundational modules on **transformer architecture**, **tokenization**, and **large language models (LLMs)**. Students have successfully implemented mini-projects in text summarization and prompt-based chatbot prototypes using **OpenAI APIs** and the **LangChain framework**.

Midway through the program, interns have also been introduced to **Retrieval-Augmented Generation (RAG)** systems and **LoRA/QLoRA fine-tuning** for custom data applications. The coming weeks will focus on building complete **AI agents and multi-modal systems**, integrating text and image generation. Students are demonstrating high engagement and creativity through weekly progress reviews and peer-to-peer code demonstrations.

Students are currently working on two projects that apply their learned concepts. The first project is a Social Media Content Calendar Agent, an intelligent AI agent that plans and generates monthly social media content for LinkedIn and Instagram. The system analyzes brand voice, target audience demographics, and trending topics to create platform-specific posts with intelligent hashtag suggestions, optimal posting time recommendations based on engagement patterns, and a balanced content mix between promotional, educational, and entertaining posts.

The second project focuses on building a Deepfake Voice Detection System, an application using diffusion models and audio analysis to detect synthetic or cloned voices. This project addresses the growing concern of voice deepfakes by building a robust detection system capable of identifying artificially generated speech patterns, protecting against voice-based fraud and misinformation.

2.2 Artificial Intelligence (AI)

Instructor: Mr. Muhammad Abdullah
Assistant Coordinator: Ms. Laiba Abbas

During the first month of the AI internship, interns progressed from learning **Python programming (basic to advanced)** and **data preprocessing, exploration, and visualization** to implementing key **machine learning algorithms** such as Linear Regression, Logistic Regression, Decision Trees, KNN, and Random Forests, along with evaluation metrics. They applied these concepts through projects like **Linkfire, Titanic Survival Prediction, and Iris**, and explored in-depth **ML case studies** including Cycle Sharing Scheme (Statistics and Probability), Concrete Compressive Strength (Regression), Yahoo Stock Prediction (Time Series), Keyword Clustering, and Ohio Clinic Classification. Interns also brainstormed **POC ideas**, selected their **final projects**, and prepared proposal reports. Moving into **Deep Learning**, they built **ANN and CNN models** for the MNIST Handwritten Digit Recognition project and deployed them using **Streamlit**. Additionally, they completed the **Prompt Engineering course by DeepLearning.AI** and are now halfway through the **Computer Vision module**, after which they will work on **CV and NLP projects** alongside their final project development.

Currently, the interns are also collaborating on two Proof-of-Concept (POC) projects. The first, **AI-Powered Soccer Referee Assistant**, focuses on leveraging **computer vision and geometric reasoning** to detect key in-game events such as offsides, fouls, and goals using a single video feed. This project aims to create a **lightweight real-time referee support system** deployable even on low-cost hardware. The second POC, **AI Skin Scan Disease Detection using Vision-Language Models (VLMs)**, lies at the intersection of **Computer Vision and NLP**. It aims to implement a **multimodal AI model** capable of analyzing skin images and generating diagnostic insights through **visual reasoning**, supporting dermatologists in **early disease detection and diagnosis**.

2.3 Cyber Security

Instructor: Dr. Muhammad Waseem
Assistant Coordinator: Ms. Laiba



Interns in Cyber Security have completed modules on **ethical hacking fundamentals**, **network reconnaissance**, and **vulnerability scanning** using tools such as **Nmap**, **Wireshark**, and **Metasploit**.
Hands-on sessions covered **password attacks**, **social engineering simulations**, and **basic malware analysis** in sandboxed environments.
Students are now working in pairs on a **"Defend the Network" challenge**, where they simulate penetration testing and apply countermeasures. The upcoming sessions will include **wireless security** and **incident response labs**.
The group has demonstrated excellent discipline and teamwork, with several students already exploring **CEH-style certification paths**.

POC Project: Zero-Day Attack Prediction using Generative AI
The *Zero-Day Attack Prediction* PoC is an advanced cybersecurity initiative aimed at enhancing proactive defense mechanisms through the integration of generative artificial intelligence. The project focuses on enabling students to understand and implement AI-driven models that can simulate and detect zero-day exploits before they occur in real-world systems.
As part of this PoC, students are learning to collect and preprocess threat intelligence data, train generative models to create synthetic exploit patterns, and build detection frameworks capable of identifying novel attack vectors. In the next phase, they will conduct simulated cyberattack scenarios, validate model accuracy, and analyze performance improvements in detection speed and precision. This initiative empowers students to apply their theoretical knowledge in cybersecurity, data science, and ethical AI, preparing them to contribute to the development of next-generation defensive technologies in Pakistan's growing digital landscape.

2.4 Game Design & Development

Instructor: Ms. Taiyaba Sanaullah
Assistant Coordinator: Mr. Muhammad Ayaz

The **Game Design & Development** domain has made remarkable progress since the start of the internship. In the initial phase, interns covered the **core theoretical foundations** of modern game creation, including **game mechanics, storytelling, player engagement models, character design, UI/UX principles, and level design**. Through case studies and discussions, they explored how creativity, logic, and aesthetics combine to craft immersive gaming experiences.

They then transitioned to the **practical development stage using Unity 3D**, learning **scene creation, object physics, lighting, camera setup, and scripting in C#**. Under close mentorship, students practiced **object-oriented coding, debugging, and modular development**, gaining skills aligned with industry workflows. Each intern maintains a **GitHub repository** to manage progress, apply version control, and document their learning, with **weekly reviews** ensuring steady improvement.

By the **mid-term milestone**, interns have developed several **functional prototypes** featuring **player control, scoring systems, collision handling, and responsive UIs**. Projects include both **2D platformers** and **3D adventure or puzzle games**, showing impressive creativity and technical skill. The **second half** of the program will focus on **optimization, sound and effects integration, particle systems, and final packaging** for presentation.

Mentors will also guide students in preparing **developer portfolios** highlighting their design process, gameplay videos, and annotated code to support future career opportunities in **game development, interactive media, or AR/VR**. Overall, the group demonstrates **strong teamwork, creativity, and discipline**, and is expected to present **fully playable demos** at the program's conclusion.

2.5 Graphics Designing & 2D Animation

Instructor: Mr. Muhammad Nauman Hanif
Assistant Coordinator: Mr. Shakeel Ahmed

The Graphics and 2D Animation domain has covered essential modules on **design principles, colour theory,** and digital composition using **Adobe Illustrator** and **Photoshop.** Interns have worked on practical design projects including **posters, logos, banners, and thumbnails,** applying their creative and technical skills effectively.

Currently, they are working on brand identity designs for multiple businesses and managing visual **content for a YouTube channel** as part of their experiential learning. In the next phase, interns will move toward video editing and animation production, exploring various tools and workflows to create professional **2D motion graphics and visual storytelling content.**

POC Project: *EduGraphics*
Under the *EduGraphics Program* Proof of Concept, interns are contributing to a creative educational initiative that transforms traditional learning into visually engaging experiences. They are designing infographics, posters, and short animated videos to simplify complex academic topics, making learning more interactive and accessible for students.
Through this project, interns are applying their design and animation skills to real educational challenges—bridging creativity with education and promoting digital inclusion. The PoC allows them to gain hands-on experience in educational content production while contributing to a sustainable model for visual learning innovation.

2.6 Digital Media Marketing & Entrepreneurship

Instructor: Ms. Tayyaba Hayat
Assistant Coordinator: Mr. Muhammad Umair

During the midterm phase, interns have covered the foundational modules of **Search Engine Optimization (SEO)** and **content marketing**. They have learned the process of keyword research, content writing, and on-page optimization techniques. Each intern has developed a basic website, optimized its content according to SEO practices, and published blogs to improve organic visibility. In addition, interns have gained creative design experience using **Canva**, where they designed logos, banners, and brand kits to build a cohesive brand identity.

In the upcoming phase, interns will advance toward **Social Media Marketing (SMM)**. Focusing on page and handle creation, campaign development, and practical implementation. They will learn how to plan, execute, and manage marketing campaigns while analysing performance metrics for better outreach and engagement.

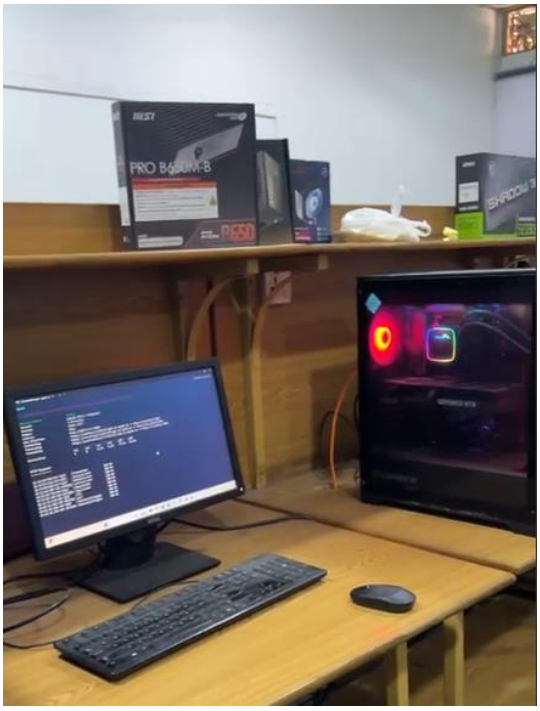
POC Project: Digital Empowerment Program
The *Digital Empowerment Program (PoC)* is a practical initiative designed to help small and local businesses establish their online presence through affordable and strategic digital marketing solutions. The project focuses on connecting skilled interns with real-world businesses that lack digital visibility, enabling mutual growth and hands-on learning.

As part of this PoC, interns are conducting research, performing keyword optimization, and developing brand identities including logos, banners, and websites for selected businesses. In the next phase, they will manage social media pages, design marketing campaigns, and track engagement analytics. This initiative allows interns to practically apply their SEO, branding, and marketing skills while supporting the digital inclusion of local enterprises in Pakistan.

3 Hardware Upgrades and System Enhancements

The success of the October Internship Program 2025 (Cycle-2) has been greatly enhanced by the hardware support generously provided by UET alumni donors from the 66-UET and 67-UET batches. Their contributions have enabled the modernization of AI and multimedia laboratories within NCAI UET Lahore, ensuring that interns can learn and experiment using current-generation computing and networking resources.

3.1 New High-performance Workstation.



- **CPU (Processor):** Intel Core i7 12700KF
- **Motherboard:** Gigabyte B760M
- **RAM:** 32GB DDR4 3200MHZ
- **SSD (Solid State Drive):** 2TB NVME SSD
- **GPU:** Nvidia RTX 5070 12GB GDDR7
- **Power Supply:** 750W 80+ GOLD PSU
- **Case:** Nitro Case ATX 3 Fans
- **Cooler:** Mesh airflow and extra fans
- Windows 11 Pro

3.2 Upgrade of Existing PC to High-performance Workstation.

- **CPU (Processor):** Ryzen 7 5700X
- **Motherboard:** B550 Gaming
- **RAM:** Existing
- **SSD (Solid State Drive):** 1 TB
- **GPU:** Existing
- **Power Supply:** Existing
- **PC Case:** Thunder Tizona
- **Cooler/Fans/TM:** 240mm MSI

These upgrades have directly improved system performance, reduced setup delays during training sessions, and provided students a professional-grade environment for hands-on experimentation. The continued hardware investment from UET's alumni community reflects their enduring commitment to strengthening the university's capacity for **AI education, innovation, and applied research**.

4 Program Summary and Closing Remarks

The **October Internship Program 2025 (Cycle-2)** marks another proud milestone in UET Lahore's ongoing mission to integrate academic excellence with hands-on, industry-aligned training. As this mid-term stage concludes, it is evident that the initiative has evolved into much more than a short-term internship—it has become a **living ecosystem of mentorship, innovation, and alumni collaboration** that continues to strengthen the bridge between classroom learning and practical application.

Across six specialized domains—**Generative AI, Artificial Intelligence, Cyber Security, Game Design & Development, Graphics Designing & 2D Animation, and Digital Media Marketing & Entrepreneurship**—interns have shown outstanding motivation, creativity, and progress. Their ongoing work on **Proof-of-Concept (PoC)** projects demonstrates how theoretical learning can be effectively translated into real-world solutions. From AI-powered assistants and cybersecurity simulations to multimedia content creation and digital-marketing strategies, every domain has contributed tangible outcomes that reflect both academic rigor and professional relevance.

A major highlight of this cycle has been the **hardware modernization and infrastructure upgrade** generously supported by **UET alumni from the 66-UET and 67-UET batches**. The addition of **high-performance GPU workstations, upgraded PCs, Jetson Orin Nano kits, and advanced networking components** has significantly enhanced the AI and multimedia laboratories at NCAI-UET. These upgrades have not only improved computing speed and system reliability but have also created a professional-grade learning environment for students. This forward-looking investment will continue to benefit future cohorts, faculty research projects, and innovation initiatives—cementing UET's capability to deliver cutting-edge AI education and applied research.

The **synergy between UET academia and its global alumni network** remains the cornerstone of this program's success. While mentors and coordinators have provided structured supervision, the alumni community has contributed vision, funding, and technical resources that make such transformative initiatives possible. Together, they have established a sustainable model for alumni-led educational development that directly empowers students and strengthens the university's academic ecosystem.

As the program now moves into its **final month**, interns are focusing on completing **capstone projects, evaluation exercises, and professional portfolio development**. The closing ceremony in late November will showcase their final deliverables, reflecting the full range of technical and creative skills acquired during the two-month cycle. A comprehensive final report summarizing key outcomes, success stories, and recommendations will be shared with all donors and stakeholders in **December 2025**.

On behalf of **UET Lahore** and the **National Centre of Artificial Intelligence (NCAI)**, we express our deepest appreciation to all **alumni sponsors, mentors, instructors, and**

coordinators for their invaluable contributions. Your generosity and commitment continue to transform vision into reality, reinforcing the legacy of UET as a pioneer in AI education and innovation.

Looking ahead, we are pleased to share that planning is already underway for the **3rd Internship Cycle**, scheduled to commence on **1st January 2026**. We sincerely look forward to your continued guidance, mentorship, and sponsorship support to make the upcoming cycle even more impactful and inclusive—further advancing our shared goal of nurturing Pakistan's next generation of AI-driven innovators and professionals.

5 Acknowledgment of Alumni Sponsors and Mentors

The organizing team of the **National Centre of Artificial Intelligence (NCAI), University of Engineering and Technology (UET) Lahore**, extends its deepest gratitude to all **UET alumni sponsors, mentors, instructors, and coordinators** whose unwavering commitment and generosity made the **October Internship Program 2025 (Cycle-2)** a resounding success.

We especially acknowledge the continued support of alumni from the **66-UET and 67-UET batches**, whose financial and technical contributions enabled the setup and upgrade of modern, high-performance computing and multimedia infrastructure that directly benefited our students.

Our sincere thanks are also extended to the **faculty advisors, domain instructors, assistant coordinators, and administrative team members** for their tireless efforts and mentorship throughout the program. Their teamwork and dedication have been instrumental in ensuring that every intern received the guidance, tools, and confidence needed to grow professionally.

This program stands as a shining example of what can be achieved through collaboration between **UET academia and its global alumni network**—a partnership that continues to strengthen the university's reputation for excellence in AI and technology education.

We look forward to your continued cooperation and encouragement as we prepare for the **3rd Internship Cycle**, scheduled to begin on **1st January 2026**, building on this shared legacy of learning, innovation, and alumni-driven development.

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