

2024

**Six Week Summer Internship**  
on  
**GENERATIVE AI & PROMPT ENGINEERING**  
(Blended Mode)

**3<sup>rd</sup> June –12<sup>th</sup> July 2024**  
*(Including Project Work)*



**PATRON**

**DR (MRS.) AMITA DEV, HON'BLE VICE CHANCELLOR, IGDTUW**

**ORGANIZING COMMITTEE**

**PROF. A K MOHAPATRA, HoD (IT), IGDTUW**

**DR. NONITA SHARMA, ASSOCIATE PROFESSOR, CO-ORDINATOR**

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**DR. ALONGBAR WARY, ASSISTANT PROFESSOR, CO-ORDINATOR**





## **About the Summer Internship Program**

The IT department is thrilled to announce an immersive internship program tailored for B.Tech students, focused on the cutting-edge domains of Generative AI and Prompt Engineering. The technical sessions for the Summer Internship program will be conducted from 3rd June – 12th July 2024. This unique opportunity promises to delve into the realms of artificial intelligence where participants will explore the intricate interplay between algorithms and human-generated prompts to foster creative outputs. Through hands-on projects and mentorship from industry experts, interns will unravel the complexities of generative models, honing their skills in crafting prompts that catalyze the generation of diverse and innovative content. At the end of the technical sessions, the students will carry out the project work 1st July – 12th July 2024. This internship not only offers a glimpse into the forefront of AI research but also equips students with invaluable practical experience essential for their future endeavors in the ever-evolving tech landscape.

### **The Generative AI Landscape**

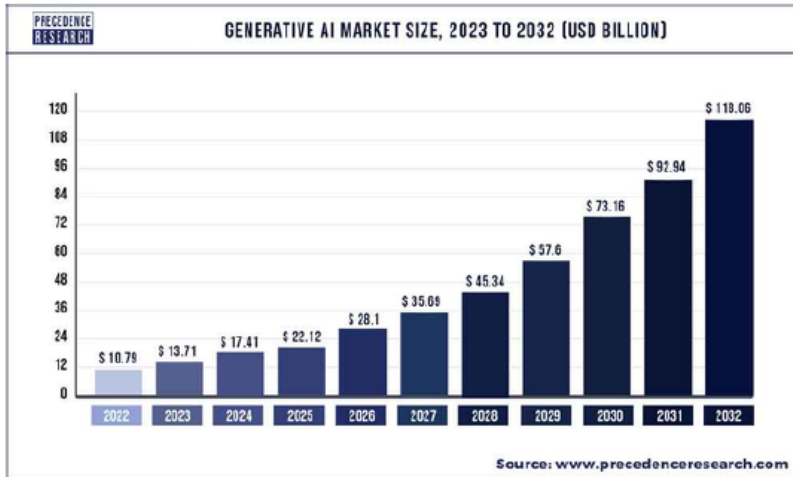
Today, we're all living in a world in which “humans with machines will replace humans without machines”—for the second time. Generative AI technology will be a critical driver of business transformation in the next five years. This will also fundamentally reshape the landscape of jobs, skills, and teaching methodologies.

Generative AI, a subset of artificial intelligence, holds immense potential in various domains such as text generation, image synthesis, and music composition. This workshop aims to provide participants with a comprehensive understanding of generative AI and prompt engineering, empowering them to harness the capabilities of AI for creative and innovative applications.



# GENERATIVE AI IS GROWING!

You should stay ahead of the curve and not be left behind!



8/10



professionals want to use Generative AI in their work

30%



have already started using Generative AI

## By attending this workshop, participants will:

- Gain insights into the latest advancements in generative AI research and development.
- Learn practical techniques for crafting effective prompts to control model outputs.
- Explore real-world applications and case studies showcasing the potential of generative AI across various domains.
- Discuss ethical considerations and strategies for mitigating bias in AI-generated content.
- Engage in hands-on exercises to apply theoretical knowledge to practical scenarios, using popular tools and libraries.



Overall, this workshop serves as a platform for participants to enhance their skills, exchange ideas, and stay abreast of emerging trends in the dynamic field of generative AI and prompt engineering. Whether you're a seasoned AI practitioner or a newcomer to the field, this workshop offers valuable insights and opportunities for professional growth and innovation to the students.

## Course Contents

### Technical Sessions (3rd June – 1st July 2024)

Building Generative AI & Prompt Engineering skill set through various case studies in:

- Focus on building foundational knowledge and practical skills.
- Each week will cover a cover topic with lectures, discussions, and hands-on labs using relevant tools and libraries.

### Project Work (1st July -12th July 2024)

#### Weeks 1-4: Theory & Hands-on

- Focus on building foundational knowledge and practical skills.
- Each week will cover a core topic with lectures, discussions, and hands-on labs using relevant tools and libraries.

#### Weeks 5-6: Project Work

- Students will work on individual or team projects applying learned concepts to real-world generative AI applications.
- Weekly sessions will provide guidance, mentorship, and opportunities for project presentations and feedback.

#### Areas to be covered in this internship program:

- Week 1: Introduction to Generative AI
  - Understanding Generative AI concepts and applications.
  - Exploring different generative models (GANs, VAEs, Diffusion Models).
  - Introduction to Prompt Engineering.



- **Week 2: Deep Learning Fundamentals**

- Review of key Deep Learning concepts (Neural Networks, Backpropagation, Optimization).
- Introduction to Transformers and their role in Generative AI.

- **Week 3: Generative Model Architectures**

- Detailed exploration of Generative Adversarial Networks (GANs).
- Understanding Variational Autoencoders (VAEs) and their functionalities.
- Introduction to Diffusion Models and their applications.

- **Week 4: Advanced Prompt Engineering Techniques**

- Fine-tuning prompts for specific creative outputs.
- Exploring different prompt engineering methods (instruction tuning, few-shot learning).
- Addressing bias and safety considerations in prompt engineering.

- **Week 5 and Week 6 (Project work)**

**Project Deliverables:**

- Project Proposal (Week 4)
- Mid-term Progress Report and Presentation (Week 6)
- Final Project Report, Presentation, and Code Demonstration (Week 12)

**Some of the Project Ideas to be used:**

- **Text Generation:** Develop a system to generate creative text formats like poems, code, scripts, or musical pieces using Generative AI.
- **Image Generation:** Create an application that generates images based on user prompts like landscapes, portraits, or artistic styles.
- **Music Generation:** Build a system to generate musical pieces in different genres or based on specific instruments.
- **Data Augmentation:** Develop a Generative AI model to create realistic synthetic data for specific applications (e.g., medical imaging, self-driving cars).

**Objective Type Test(s) on various topics will be conducted for successful completion of the first phase of the Internship. The Project Work will be evaluated for successful completion of the Internship.**



### **Resource Persons**

Experts from premier National and International academic institutions and Industry with vast experience in Information Security.

### **Who can Apply**

Internship is open to MTech., B.Tech., MCA students having knowledge of Programming, Computer Network, and Information Security.

### **How to Apply**

Interested candidates should fill the online registration form latest by 30.05.2024 by 05:00 pm at the following link: <https://forms.gle/DvRWkcsL6tR2vMQp6>

or scan the following QR code :



### **Registration Fee:**

Rs 1499/- (for IGDTUW students)

Rs 2499/- (for outside IGDTUW students)

### **Bank Details for Registration Fee Payment**

Name and Address of Beneficiary : Registrar, IGDTU for WOMEN

Bank Account Number : 0900100 0018949

IFS Code: PSIB 000 1098

Name and Address of Bank : Punjab and Sind Bank, New Delhi GGSIP University,  
Kashmere Gate, Delhi 110006

### **Certificate**

On successful completion of the Internship certificate shall be awarded.

**Contact Us** : For any Query, please write to [hodit@igdtuw.ac.in](mailto:hodit@igdtuw.ac.in)



### **About the University**

Indira Gandhi Delhi Technical University for Women (IGDTUW) is a State University of Government of Delhi. The University facilitates and promotes studies, research, technology, innovation, incubation, and extension work in emerging areas of professional education among women. The objective of the University is to foster industry relevant research and innovations and empower the women of our country through value based higher education making them employable, self-reliant, responsible citizen of the country.

### **About the Department**

Department of IT aims to prepare students to undertake careers involving innovation and problem-solving using IT, or to undertake advanced studies for research careers in IT. The department has established its expertise in the emerging areas like Information Security, Machine Learning, Big Data Analytics, Software Development and Cryptography to name a few.

### **About Sansoftech**

The organization specializes in key technologies and tools, skilled resources, and information solutions, areas that companies hold key to e-business success. Sansoftech is a pioneer in Industry based training for future technocrats in addition to IT consultations, and other implementation services. Overall the approach is to provide end-to-end solutions to technology driven companies taking an initiative to move towards business transformation.