# Proposal: Two-Day Hands-On Workshop on Generative AI

**Prepared for:** Engineering College Students  
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## 1. About HERE AND NOW AI

**HERE AND NOW AI** is an Artificial Intelligence Research Institute dedicated to transforming how AI is taught, researched, and applied. Founded in 2018, with roots as a data-science research institute since 2011, our mission is to build enterprise-grade AI solutions and make AI education accessible to every learner. We specialize in AI Product Engineering, AI as a Service (AIaaS), and pioneering R&D in autonomous agents.

Our slogan, *“Designed with passion for innovation,”* reflects our commitment to empowering the next generation of tech leaders with practical, industry-relevant skills.

## 2. Workshop Overview

We propose an intensive, hands-on **Two-Day Generative AI Workshop** designed specifically for engineering students. This workshop will equip participants with the foundational skills to build, customize, and deploy sophisticated AI-powered chatbots using the Google Gemini API.

Over the course of 12 hours, students will move from fundamental concepts to building four distinct, real-world AI projects, gaining practical experience in one of the most transformative technologies of our time.

* **Title:** GenAI for Future Innovators: A Two-Day Hands-On Workshop
* **Objective:** To provide students with the practical skills to build AI-powered chatbots and Retrieval-Augmented Generation (RAG) systems from scratch.
* **Target Audience:** Engineering and technology students.
* **Duration:** 2 Days (6 hours per day, 12 hours total).
* **Prerequisites:** Basic familiarity with programming concepts (Python) is helpful but not strictly required. A passion for learning and innovation is essential.

## 3. Key Learning Outcomes

Upon completion of this workshop, students will be able to:

* **Understand Core GenAI Concepts:** Explain the fundamentals of Large Language Models (LLMs), prompting, and the role of APIs in AI development.
* **Build AI Chatbots:** Develop functional chatbots using Python and the Google Gemini API.
* **Implement Conversational Memory:** Engineer chatbots that can remember and reference previous parts of a conversation.
* **Master Retrieval-Augmented Generation (RAG):** Build AI systems that can reason over and answer questions about custom data from text files and live websites.
* **Develop with Professional Tools:** Gain hands-on experience with Python, Gradio for UI development, and environment management for secure API key handling.

## 4. Workshop Agenda

### **Day 1: Foundations of GenAI & Building Your First Chatbot (6 Hours)**

| Module | Topic | Duration | Key Activities |
| --- | --- | --- | --- |
| **1** | **Introduction to Generative AI** | 1.5 Hours | - What are LLMs? (Gemini, GPT) - The power of prompts and tokens. - Introduction to the Google Gemini API. - Setting up a professional development environment. |
| **2** | **Project 1: Build a Chatbot (Without Memory)** | 2.5 Hours | - **Hands-On:** Code a stateless AI chatbot. - Understand system prompts to define AI personality. - Create a simple, interactive web UI with Gradio. |
| **3** | **Project 2: Give Your Chatbot a Memory** | 2 Hours | - **Hands-On:** Upgrade the chatbot to be stateful. - Learn to manage and pass conversational history. - Test the chatbot’s ability to hold a coherent conversation. |

### **Day 2: Advanced Applications with RAG (6 Hours)**

| Module | Topic | Duration | Key Activities |
| --- | --- | --- | --- |
| **4** | **Introduction to RAG** | 1 Hour | - What is Retrieval-Augmented Generation? - Why RAG is a game-changer for custom AI. - Exploring real-world use cases (chat with your data). |
| **5** | **Project 3: Build a RAG Bot with Text** | 2.5 Hours | - **Hands-On:** Create a RAG bot that uses a text file as its knowledge base. - Learn to load, process, and inject custom context into a prompt. |
| **6** | **Project 4: Build a RAG Bot with Web Data** | 2 Hours | - **Hands-On:** Build a RAG bot that scrapes a live website for context. - Use requests and BeautifulSoup to fetch web data. - Create an AI that can answer questions about a specific website. |
| **7** | **Wrap-Up & Next Steps** | 0.5 Hours | - Recap of the four projects. - Q&A session with instructors. - Guidance on future learning paths and advanced projects. |

## 5. What We Provide

* **Joint Certification:** A certificate of completion co-branded by HERE AND NOW AI and the partner college.
* **Complete Project Code:** Access to the full source code for all four projects.
* **Career Resources:** Guidance on building a GitHub portfolio, resume templates, and prompt libraries.
* **Expert Instruction:** Training delivered by industry professionals from HERE AND NOW AI.

We are excited about the opportunity to partner with your institution and empower your students to become the next generation of AI innovators.