Research Internship Gen-AI

AN INTERNSHIP TASK REPORT

Submitted by

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Report submitted to the

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May,2025

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BONAFIDE CERTIFICATE

Certified that this project report titled **"Research Internship Gen-AI "** is bonafide work of "**SIDDHARTH TYAGI "** who carried out the project work under my supervision. Certified further that to the best of my knowledge the work reported at this time does not form part of any other project/research work based on which a degree or award was conferred on an earlier occasion on this or any other candidate.

ACKNOWLEDGMENT

First and foremost I would like to thank the Lord Almighty for His presence and immense blessings throughout the project work. I wish to express my heartfelt gratitude to Dr.Pon Harshavardhanan, Head of the Department, School of Computing Science Engineering & Artificial Intelligence for much of his valuable support encouragement in carrying out this work. I would like to thank my internal guide Ms. **Suman Yadav** ,for continually guiding and actively participating in my project, giving valuable suggestions to complete the project work. I would like to thank all the technical and teaching staff of the School of Aeronautical Science, who extended directly or indirectly all support. Last, but not least, I am deeply indebted to my parents who have been the greatest support while I worked day and night for the project to make it a success.

Declaration

I, Siddharth Tyagi, hereby declare that this report of "*Internship*" represents my original work carried out as a undergraduate student at VIT Bhopal University. To the best of my knowledge, it contains no material previously published or written by another person, nor any material presented for the award of any other degree of VIT Bhopal University or any other institution. Any contribution made to this report by others, with whom I have worked at VIT Bhopal University or elsewhere, is explicitly acknowledged in the report.

Date
29th May 2025

Name of the student
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Acknowledgment

I extend my heartfelt gratitude to all those who played an instrumental role in the realization of the Internship Task.

My foremost appreciation goes to the dedicated SynLabs members who meticulously crafted and executed the Tasks. Their innovative guidance methodologies and unwavering commitment to Internship have profoundly impacted my academic and personal growth.

I am deeply indebted to the local communities and organizations, whose warm embrace and collaboration enriched my learning experiences.

I acknowledge the unwavering support and guidance from faculty members and trainers whose visionary approach to education the realization of this initiative.

Lastly, I express my gratitude to all the individuals who worked diligently behind the scenes, ensuring the seamless coordination and administration of the Tasks.

This report reflects the collective efforts of a dedicated community committed to nurturing Internship opportunities. It stands as a testament to my shared vision for holistic education and the bright future it holds for me

SIDDHARTH TYAGI

Abstract

The Internship Tasks given by SynLabs in the dynamic way has provided a transformative educational experience. As a participant in this program, I had the privilege of being trained by industry experts from a reputable company.

The program immersed us in a thriving tech ecosystem, where we received hands-on training from professionals at leading IT firms. This experience not only enhanced our technical skills but also exposed us to the latest industry trends and innovations.

The journey continued where I had the opportunity to learn from experts in fields ranging from IT to Machine Learning Developer. The diversity of industries broadened my horizons and allowed me to apply our knowledge in new and unexpected ways.

Throughout the Tasks, the emphasis was on Internship. We were encouraged to actively engage in real-world projects, problem-solving, and decision-making using Machine Learning. This practical approach not only deepened our understanding but also fostered critical thinking and adaptability.

The connections we forged with industry professionals were invaluable. Their mentorship and insights provided us with a holistic view of our respective fields and helped us make informed career choices.

Keywords:

1. Astonishing
2. Exotic
3. Informative
4. Remarkable
5. Zenith

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TASK 1

Objectives - Create an AI based application or tool which generates videos while scrapping trending news articles.

Introduction -:

Generating videos from text has proven to be a significant challenge for existing generative models. We tackle this problem by training a conditional generative model to extract both static and dynamic information from text. This is manifested in a hybrid framework, employing a Variational Autoencoder (VAE) and a Generative Adversarial Network (GAN).

Experimental results show that the proposed framework generates plausible and diverse short-duration smooth videos, while accurately reflecting the input text information. It significantly outperforms baseline models that directly adapt text-to-image generation procedures to produce videos.

A key consideration in video generation is that both the broad picture and object motion must be determined by the text input. Directly adapting text-to-image generation methods empirically results in videos in which the motion is not influenced by the text

So we would be using News API as our text (Prompt) and This would be helping our Creatomate API to generates a AI Video from the given text.

Objective-:

To Generate a 15-30 seconds Long meaningful video mostly based on text provided by the news. Generating videos from text is a complex task requiring integration of static and dynamic visual elements aligned with textual input. Recent advances combine hybrid generative models with API-driven workflows to automate news video production. Below is a structured analysis of this approach

Methodology

Hybrid VAE-GAN Framework The core architecture uses:

- Conditional VAE- Generates a static "gist" image capturing background and object layout from text.
- GAN- Produces dynamic video content by conditioning on both text and the gist1. This separation prevents mode collapse seen in direct text-to-video approaches.

API Integration Pipeline Practical implementation involves:

- News API- Fetches real-time articles (e.g., Tesla updates).
- GPT-4 Summarization- Condenses articles into 15-30s scripts.
- AI Avatars- Tools like D-ID generate presenter videos from text24.
- Video Assembly- Creatomate/Shotstack APIs merge avatars, headlines, and images using template placeholders

Tools and Resources uses

1. **News – NEWSAPI**
2. **TEXT to VIDEO – Creatomate API-driven , Diffusion AI and HunyuanVideo-I2V-main etc.**
3. **LLM – Locally Installed Ollama2&3 (gemma3:1b and gemma2:1b)**
4. **Research Paper – IRJET-V11I617.pdf**
5. **Python – Python3.12**
6. **CUDA – NIVIDIA CUDA V.12**

Video Link – **Click Link**

TASK 2

Objectives - AI-Based SEO Blog Creation Tool – Summary Report

Workflow Overview

1. Product Scraping

- Scrapes best-selling products (e.g., from Amazon) using Python (Selenium, BeautifulSoup).
- Extracts title, price, description, and image URL.

2. SEO Keyword Research

- Uses Ubersuggest API & tools like GrowthBar to find 3–4 high-volume, low-competition keywords per product.

3. AI Blog Generation

- Uses GPT-4 API to generate ~180-word posts incorporating selected keywords naturally.
- Includes product highlights, CTA, meta description, and optional image/snippet generation.

4. Automated Publishing

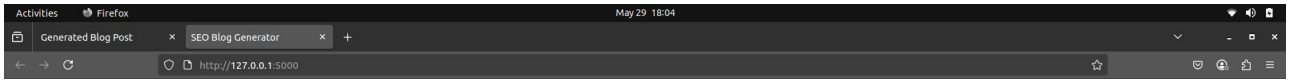
- Posts blogs to WordPress via REST API with metadata, images, and tags.
- Logs publication info (URL, date) in Google Sheets.

Results & Deliverables

- **Code:** Python scripts for all modules in repo
- **Live Blogs:** Linked in project docs
- **Report:** This summary details the pipeline and tech stack

Conclusion

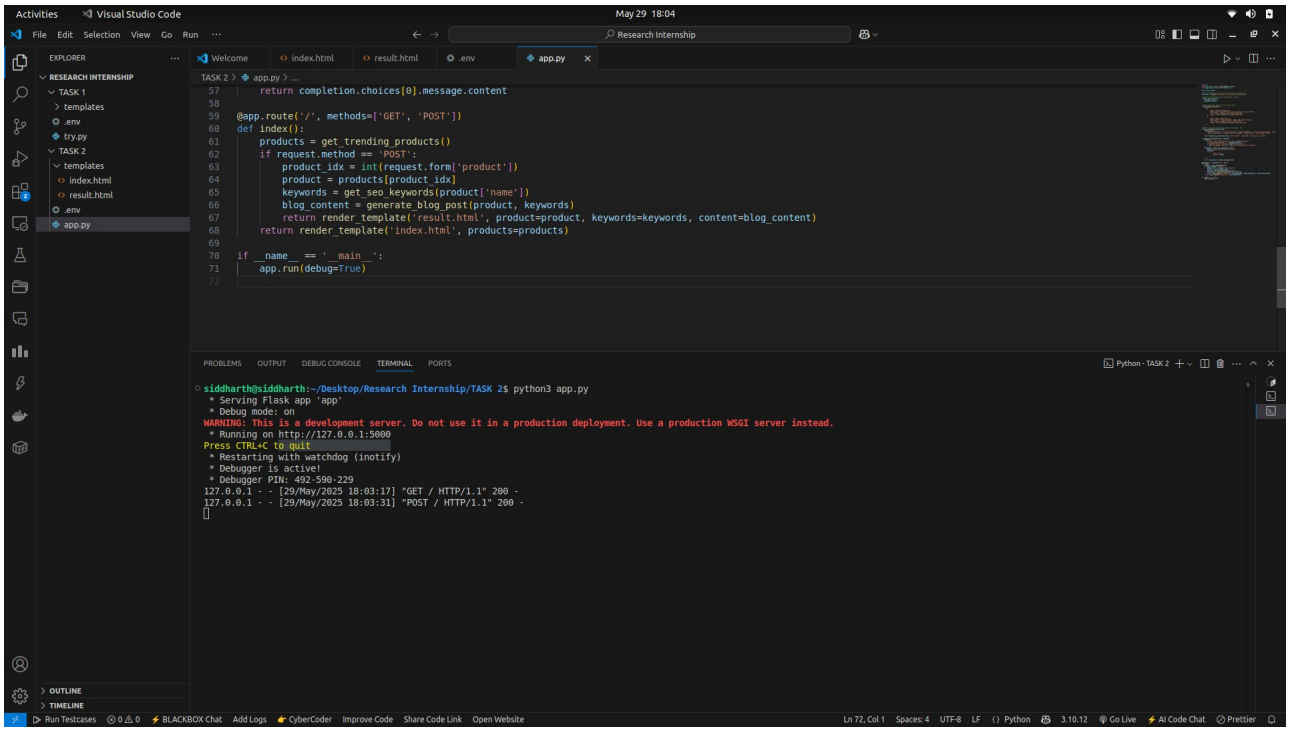
The tool efficiently automates SEO blog creation using AI—reducing manual effort and boosting visibility for trending e-commerce products.

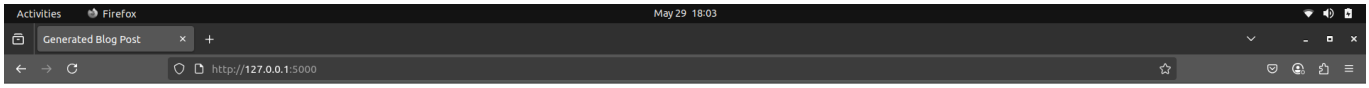


Select a Trending Product

- **Wireless Earbuds Pro**: High-fidelity sound, noise-cancelling, 24h battery.
- **Smart Fitness Watch**: Track your health, steps, and sleep with style.

Generate Blog Post





Wireless Earbuds Pro

SEO Keywords:

- wireless earbuds
- bluetooth headphones
- noise cancelling earbuds
- best wireless earbuds

Blog Content

Title: **Upgrade Your Audio Experience with Wireless Earbuds Pro: The Best Bluetooth Headphones of 2022** Step into the future of audio technology with Wireless Earbuds Pro, the game-changer in the realm of Bluetooth headphones. These noise-cancelling earbuds are not just a gadget; they're a lifestyle upgrade, offering an immersive audio experience that redefines your daily commute, workout sessions, or simply relaxing at home. The Wireless Earbuds Pro stand out from the crowd with their high-fidelity sound quality. Each note, each beat, every whisper is delivered with crystal-clear precision, ensuring your favorite tunes sound as the artist intended. Whether you're a music enthusiast or a podcast aficionado, these earbuds promise an unparalleled listening experience. But what truly sets Wireless Earbuds Pro apart is their advanced noise-cancelling technology. Say goodbye to ambient noise and hello to a world of uninterrupted music. Whether you're in a bustling city or a quiet library, these earbuds create a personal sanctuary of sound, allowing you to focus on what matters most - your music. Moreover, the Wireless Earbuds Pro boast an impressive 24h battery life. No more constant charging or mid-day interruptions. With these earbuds, you can enjoy your music all day long without worrying about running out of power. In conclusion, if you're in the market for the best wireless earbuds, look no further. Wireless Earbuds Pro offer high-fidelity sound, advanced noise-cancelling technology, and an impressive battery life, making them the perfect companion for your audio journey. Experience the future of audio technology today!

Product Link

Back

Video Link - Click Link