GenAI Unit-1 Project Assignment

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Problem Statement: Article Summarizer

The objective of this project is to develop an Article Summarizer that automatically generates a concise and meaningful summary from a long textual article.
This project aims to reduce the effort required to read lengthy documents by extracting the most important information using transformer-based NLP models.

Abstract:

With the rapid growth of digital content, reading and understanding long articles has become time-consuming.
This project implements an **Article Summarizer** using a pre-trained transformer model from the Hugging Face library.
The system takes a long article as input and produces a shorter, coherent summary while preserving the key ideas of the original text.
The project demonstrates the effectiveness of encoder–decoder transformer architectures for abstractive text summarization tasks.

Short documentation:

What I Understood:

Text summarization is a NLP task that aims to condense large amounts of text into a shorter form without losing important information.
Transformer-based models use attention mechanisms to understand the context of the entire text and generate meaningful summaries.
Encoder–decoder architectures are particularly suitable for summarization because they first understand the input text and then generate a rewritten summary.

What I Built:

Implemented an Article Summarizer using the Hugging Face transformers library.
The summarizer uses a pre-trained **BART-based encoder–decoder model** to perform abstractive summarization.
The system accepts a multi-paragraph article as input and generates a shorter summary by controlling parameters such as maximum length, minimum length, and beam search.
This project does not require any model training and works efficiently using pre-trained models.

Sample Output:

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ORIGINAL ARTICLE:

Generative Artificial Intelligence refers to systems that can create new content such as text,
images, audio, and video. These systems are trained on large datasets and learn complex patterns
from data. Generative AI models are widely used in applications such as chatbots, content creation,
medical diagnosis, education, and software development.

Despite its benefits, generative AI introduces several challenges. These include the risk of
hallucinations, biased outputs due to biased training data, and the spread of misinformation.
Deepfake technology powered by generative AI also raises serious ethical and security concerns.

Researchers and organizations are actively working on responsible AI frameworks to address these
issues. Techniques such as bias mitigation, human-in-the-loop systems, and transparency measures
are being developed to ensure the safe and ethical use of generative AI technologies.


GENERATED SUMMARY:
Generative Artificial Intelligence can create new content such as text, images, audio, and video. Generative AI models are widely used in applications such as chatbots, content creation, medical

Original Length: 127 words
Summary Length: 32 words
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