



SUPERIOR UNIVERSITY

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Project Report: Text Summarization using T5 and Gradio

Objective:

The aim of this project is to build a simple yet effective text summarization application using the T5 model from Hugging Face Transformers, with a user-friendly interface provided by Gradio.

Technologies Used:

- Python
- Hugging Face Transformers Library
- T5 Model (t5-small)
- PyTorch
- Gradio for GUI
- FPDF for report generation

Methodology:

1. We used the T5 (Text-To-Text Transfer Transformer) model, specifically the t5-small version.
2. The input text is encoded using the T5 tokenizer and passed through the T5 model for summarization.
3. The generated summary is decoded and presented to the user.
4. The Gradio library is used to create a web-based interface for real-time summarization.
5. A function named summarize was created, integrating the tokenizer and model logic.
6. A demonstration was done using a paragraph about Hugging Face to validate the summarization.
7. The application is launched with Gradio's Interface and launch() functions.

Conclusion:

This project demonstrates how to deploy a powerful NLP model with minimal effort using Hugging Face and Gradio. The final result is a working text summarizer that can process user input and return concise summaries in real-time.

Future Work:

- Upgrade to more powerful models like t5-base or t5-large for better summarization quality.
- Add multilingual summarization capabilities.
- Enable file upload (PDF, DOCX) for document-level summarization.
- Implement caching and response optimization for large-scale use.