

GEN-AI UNIT 1 HANDS-ON

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| Task | Model | Classification (Success/Failure) | Observation (What actually happened?) | Why did this happen? (Architectural Reason) |
|------------|---------|----------------------------------|--|---|
| Generation | BERT | Failure | Could not generate a meaningful continuation; produced errors or incoherent text. | BERT is an encoder; it isn't trained to predict the next word |
| | RoBERTa | Failure | Output was nonsensical and the pipeline failed to generate proper text. | RoBERTa is also encoder-only and lacks a decoder for sequence generation. |
| | BART | Success | Generated a fluent continuation of the prompt. | BART has an encoder-decoder architecture trained for sequence-to-sequence generation. |
| Fill-Mask | BERT | Success | Predicted 'create', 'generate'. | BERT is trained on Masked Language Modeling (MLM). |
| | RoBERTa | Success | Predicted highly accurate and confident masked tokens. | RoBERTa is an optimized encoder trained extensively on MLM. |
| | BART | Partial Success | Filled the mask but predictions were less direct or varied. | BART is trained with denoising autoencoding, not pure MLM. |
| QA | BERT | Partial Success | Extracted relevant phrase such as "hallucinations, bias, and deepfakes" with low confidence. | Base BERT is not fine-tuned for question answering tasks. |
| | RoBERTa | Partial Success | Returned similar or slightly better span selection than BERT. | Good encoder, but still specifically trained for QA purposes. |
| | BART | Partial Success | Sometimes produced the correct answer span, sometimes incomplete. | Encoder-decoder can correctly map question-context pairs, but without fine-tuning properly for QA, its performance is unstable. |

GITHUB LINK:

https://github.com/chandan365c/UE23CS342BA4_GenAI/tree/main/UNIT1