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Section: A

GenAI & NLP Project Ideas with HF models

Category 3: Analysis & Extraction (The "Smart" Agents)

Fake News Detector

- **Goal**: Analyze a headline to see if it looks sensationalist or reliable.

- **Tech**: Fine-tuned BERT model for classification.

We used a **Hugging Face pre-trained Transformer model based on BERT** called **mrm8488/bert-tiny-finetuned-fake-news-detection** for our fake news classifier.

This model is built on **BERT (Bidirectional Encoder Representations from Transformers)**, which understands context from both left and right sides of a word in a sentence.

We accessed the model using the Hugging Face **pipeline("text-classification")** API, which handles tokenization

pipeline("sentiment-analysis") - for detecting the emotional and sensational tone.

pipeline("ner") - To identify important names and places in the headline

confidence scores show how sure the model is about its prediction.

fine-tuning makes a general model suitable for a specific task like fake news classification.

```
...
    Headline: Breaking: Scientists discover miracle cure overnight!

    Fake News Prediction:
    [{'label': 'LABEL_1', 'score': 0.9992097616195679}]

    Sentiment Analysis:
    [{'label': 'POSITIVE', 'score': 0.9989691972732544}]

    Named Entity Recognition:
    []
```

Conclusion: combining multiple NLP pipelines creates a **smart analysis agent** instead of a single-task model.