

NLP Text Summarization Application

A web application that uses Natural Language Processing (NLP) techniques to generate concise summaries from longer documents.

Features

- *Multiple Summarization Algorithms*:
 - TextRank (graph-based)
 - Frequency-based
 - Latent Semantic Analysis (LSA)
- *Customizable Summary Options*:
 - Adjust summary length by number of sentences or percentage of original text
 - Focus on specific aspects (key entities, actions, quotations, statistics)
 - Save summaries to a database for future reference
- *Database Integration*:
 - Store and retrieve previous summaries
 - Manage saved summaries (title, favorite status, etc.)
 - View summary history and metrics

How It Works

1. The application uses extractive summarization techniques to identify the most important sentences in a document.
2. Each algorithm scores sentences based on different criteria:
 - TextRank: Uses graph-based ranking similar to PageRank
 - Frequency-based: Uses TF-IDF to identify important terms
 - LSA: Uses latent semantic analysis to identify underlying topics
3. Additional features allow focusing on specific types of sentences (containing key entities, quotes, etc.)
4. The database stores summaries for future reference and comparison

Usage

1. Navigate to the "New Summary" page
2. Upload a text file or paste text directly
3. Adjust the summarization parameters in the sidebar
4. Click "Generate Summary" to process the text
5. View the results and saved summaries in the "History" page