Université Claude Bernard Lyon 1

PSX PNR: Pakistan Stock eXchange Personalized News Recommendation

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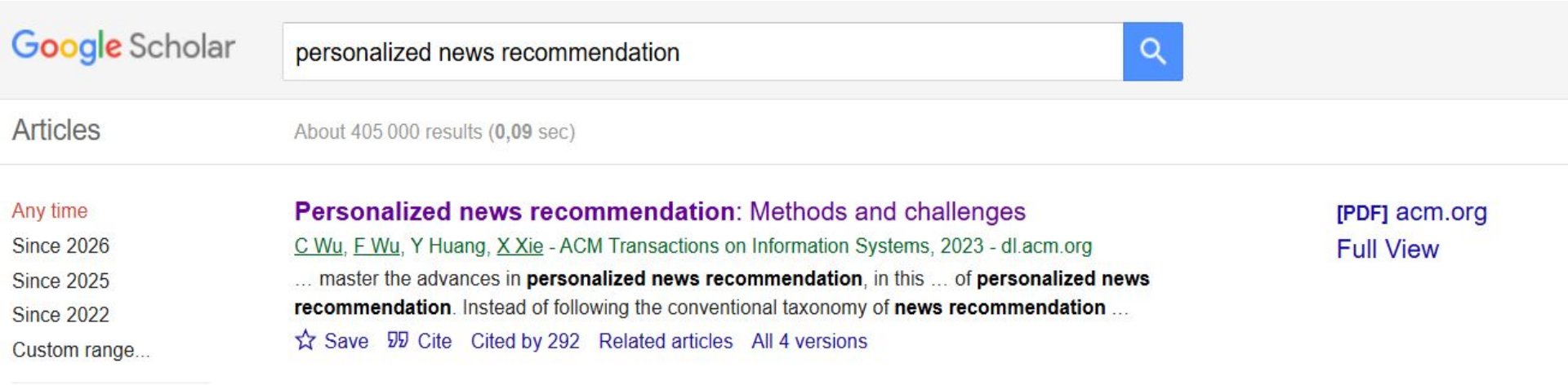
Section I - Problem Statement

- Too much news makes it hard for investors to find what truly matters to them. Time Consuming
- Most platforms show general market news, not personalized stock-specific updates.
- A smart system is needed to recommend relevant stock news based on user interests especially for PSX investors..

Section I - Project Objectives (Motivation)

- Deliver personalized stock-market news tailored to each user's interests and sectors (Banking/Construction/Technology) .
- Reduce information overload by filtering and ranking only the most relevant articles.
- Use NLP embeddings (Word2Vec/BERT) to understand the semantic meaning of financial news and effect on stocks.
- Provide an easy interface where users can quickly access top-K relevant market updates daily under 20 minutes.

Section II – Approach and Datasets



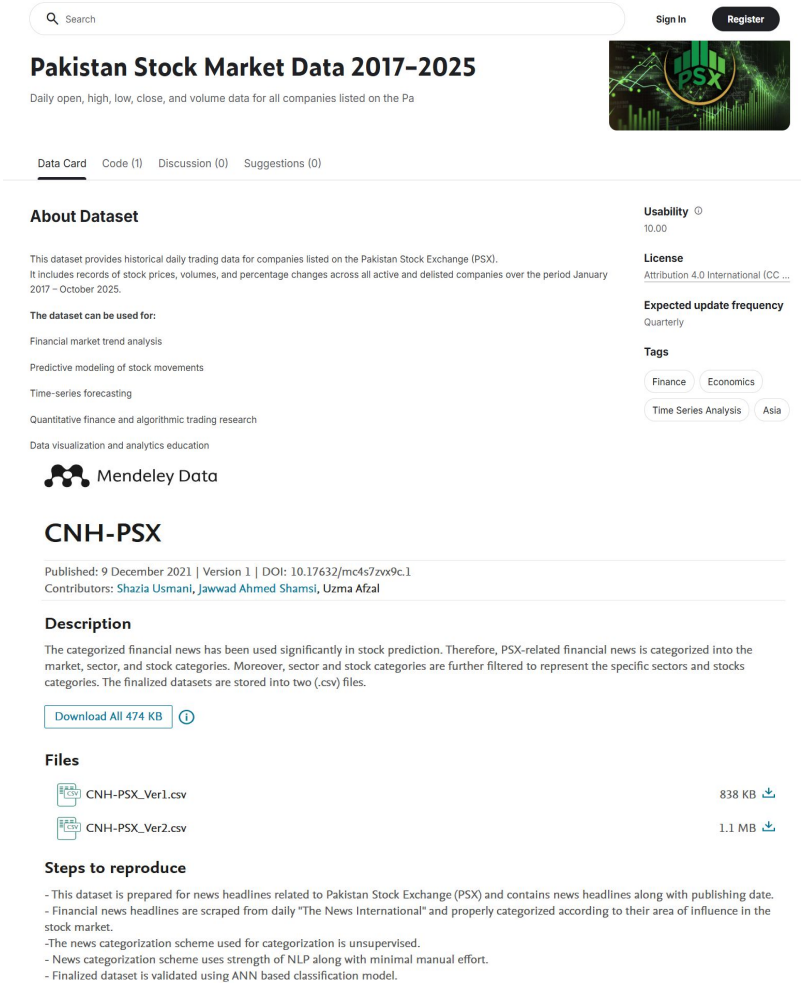
1. Confirms Our Proposed Pipeline Design
2. Justifies Using NLP Embeddings for Semantic News Text
3. Explains Why User Profiling Matters - Use of Synthetic Users due to time and resource constraints

Section II - Datasets

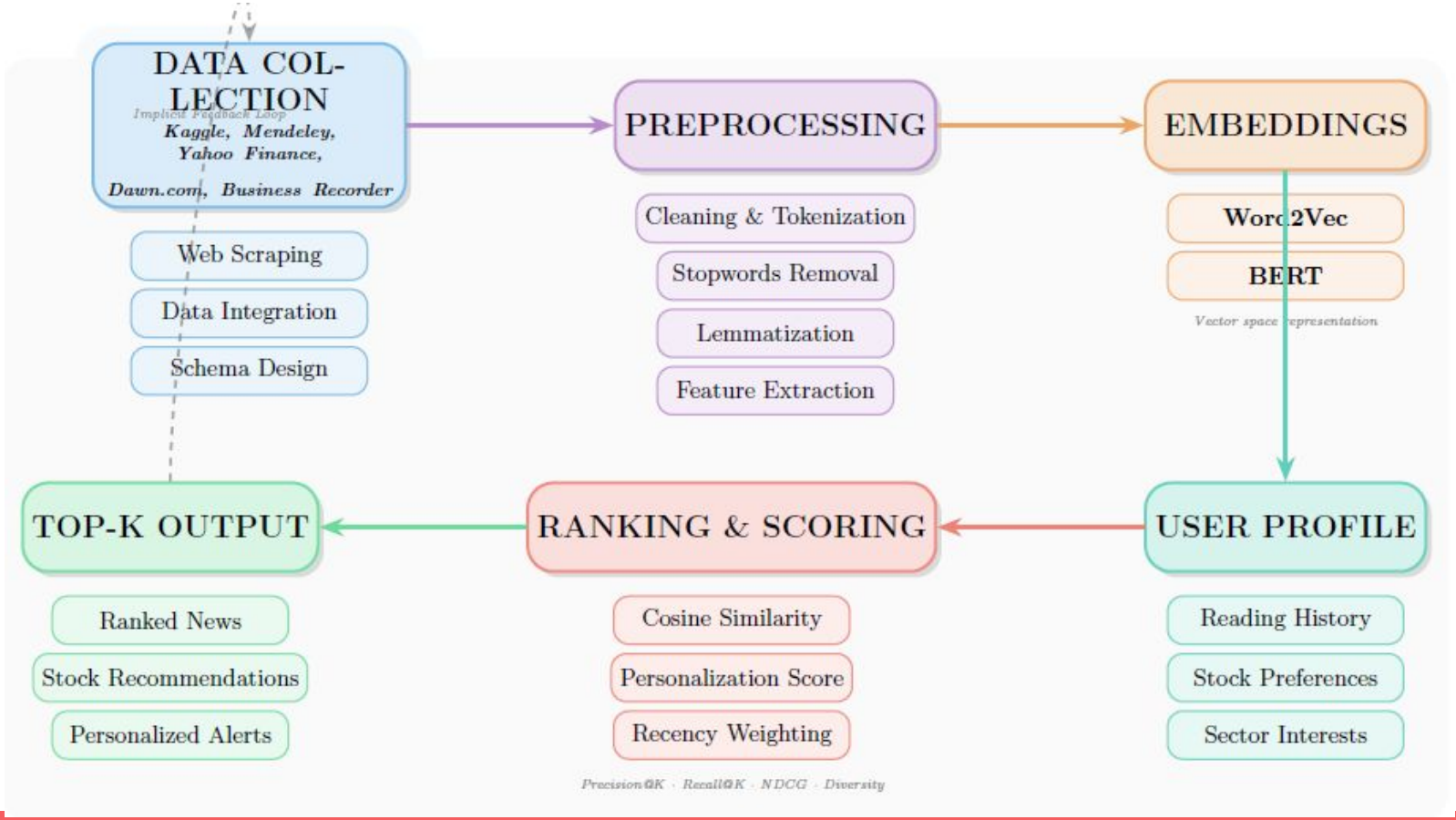
- **Pakistan News Headlines (Kaggle):** Provides a large general news corpus to understand Pakistani news language and context.

- **Pakistan Stock Market Data 2017–2025 (Kaggle):** Supplies historical PSX price trends to analyze market movements and relate major news events to stock activity.

- **CNH-PSX Categorized Financial News (Mendeley):** Offers finance-focused, PSX-relevant news with category labels.

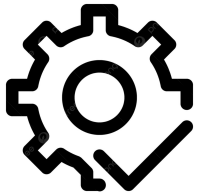


Section III – System Overview

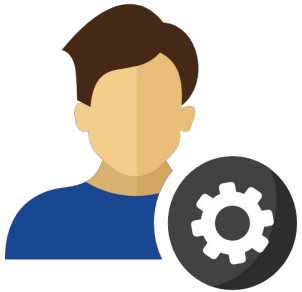


Section III - Development

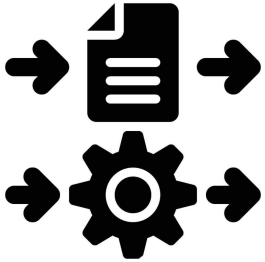
Phase 1: Fixed Corpus (Baseline)



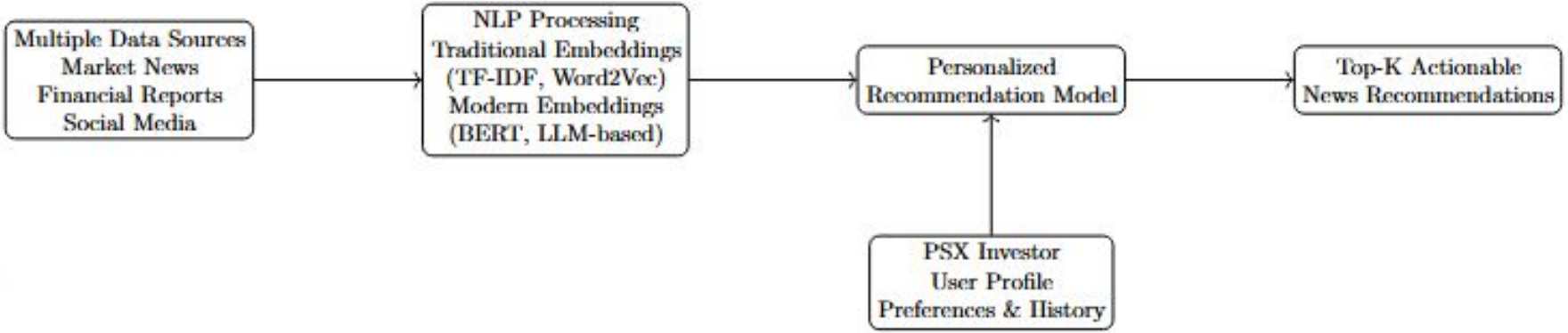
(S)BERT
vs
Word2Vec



Phase 2: Advanced Features (If Time Permits, or in Parallel)



Thank you


Multiple Data Sources
Market News
Financial Reports
Social Media
NLP Processing
Traditional Embeddings
(TF-IDF, Word2Vec)
Modern Embeddings
(BERT, LLM-based)
Personalized
Recommendation Model
Top-K Actionable
News Recommendations
PSX Investor
User Profile
Preferences & History