Unsupervised GCN BERTopic Pipeline MISH - Instruct all-MiniLM-Mistral 7B _High-Dimensional__ Astrophysical L6-v2 c-TF-IDF → Keywords UMAP Reduced HDBSCAN Embeddings Topic Clusters Embeddings **Astrophysical Topic** Stopwords GCN **Summaries** Labelled List Circulars Contrastive Circulars Fine-Tuning Observation-Based Fine-Tuned Cosine Clusters Fine-Tuned Circular Embeddings Similarity all-MiniLMwith **BERTopic** L6-v2 Fine-Tuned Zero-Shot Label Embeddings Observation Labels High energy. Optical.. 3. Radio...

Supervised Observation-Based Clustering Pipeline