TABLE I
COMPARISON TABLE OF METHODS AND DATASETS

Paper	Methods Used	Dataset	Performance	Limitations	Features Analyzed
Zhang et al. (2015)	LSTM-based models for text classification	Text datasets (various domains)	High accuracy in classifying topics	Limited to text-based content, requires extensive labeled data for training	Textual content features like sentiment, keywords, topics
Yu et al. (2018)	Multi-label classification using deep learning	Text datasets (news, social media)	Multi-label classification with high accuracy	Difficulty in handling imbalanced data	Multiple labels, text features for classification
Vaswani et al. (2017)	Attention mechanism for sequence processing	Text datasets	Significant improvement in sequence-to-sequence tasks	Computationally expensive, requires large data for training	Textual features, attention-based mechanism
Li et al. (2019)	Combination of LSTM and CNN for theme detection	Video datasets (YouTube)	Efficient in detecting themes from videos	Relies on speech-to-text accuracy, limited to video transcripts	Audio features, timestamp extraction, video content
Hannun et al. (2014)	DeepSpeech: Speech-to-text recognition	Speech datasets	High accuracy for transcription tasks	Limited by noise and accents in speech	Audio features for speech recognition
Baevski et al. (2020)	Wav2Vec for unsupervised pre-training	Speech datasets	Enhanced speech recognition accuracy with less labeled data	Requires fine-tuning for domain-specific tasks	Audio features, speech pre-training
Liu and Lapata (2019)	BART-based text summarization	Text datasets (news articles)	Effective in summarizing long-form text	Requires large datasets, slow processing for long texts	Textual content, summarization features
Raffel et al. (2020)	T5 for text-to-text transformation	Text datasets (various domains)	High performance in multiple NLP tasks	Requires large computational resources for training	Textual features, transfer learning for summarization
Khandelwal et al. (2020)	T5-based summarization for video transcripts	Video datasets (YouTube, TED talks)	High performance in summarizing video transcripts	Limited to transcripts, needs improvements in video content analysis	Video transcripts, summarization features
Devlin et al. (2019)	BERT for language understanding	Text datasets (general)	State-of-the-art performance in various NLP tasks	Computationally expensive for fine-tuning	Textual features, bidirectional language understanding
Lee et al. (2019)	BERT for question answering in video transcripts	Video datasets (TED talks)	High performance for answering questions about video content	Requires large training sets, may not handle diverse question forms well	Video transcript, question answering features
Wang et al. (2020)	Reinforcement learning for theme detection	Video datasets (YouTube, TED talks)	Good for detecting evolving themes over time	Requires training with large amounts of data, limited to specific themes	Video content, evolving themes, reinforcement learning approach