

A Review on Aspect-Based Sentiment Analysis of Student Feedback using LSTM

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Abstract: *A comprehensive system for analysing student feedback using supervised and unsupervised machine learning techniques. The system preprocesses textual feedback data, performs sentiment analysis (positive/negative/neutral), and categorizes feedback into predefined topics. It also employs topic modelling to discover hidden themes and clustering to group similar feedback. Performance is evaluated using appropriate metrics, and interactive visualizations and reports are generated. The system aims to provide a holistic understanding of student opinions and experiences, offering valuable insights for educational improvement. The system employs a two-layered Long Short-Term Memory (LSTM) neural network to perform fine-grained sentiment classification on various aspects of the teaching and learning experience, such as Teaching, Pedagogy, and Behavior.*

Built using Python and Flask, the system provides a web-based interface where users can input feedback, which is then processed to extract aspect-specific sentiments. The backend leverages Natural Language Processing (NLP) techniques for preprocessing and aspect extraction, followed by sentiment classification using the LSTM model. This project aims to provide actionable insights to faculty and administrators by highlighting strengths and areas needing improvement based on student sentiment. The proposed system not only enhances the evaluation of teaching effectiveness but also promotes data-driven decision-making to improve academic quality..

Keywords: Opinion Mining, Aspect Sentiment Detection, LSTM Neural Network, Educational Data Mining, Natural Language Processing (NLP)

