Assessment of Descriptive Response Manuscripts Utilizing Natural Language Processing and Deep Learning Frameworks

Sharmila Chidaravalli

Department of Information Science & Engineering, Global Academy of Technology, Bangalore, India

Research Scholar, Visvesvaraya Technological University, Belgaum, India

Dr. Vimuktha E Salis

Department of Ocean Studies and Marine Biology, Pondicherry University, Port Blair, Andaman and Nicobar Islands, India

Abstract

In educational contexts, evaluating descriptive answer sheets is a crucial but frequently time-consuming process that requires significant work and time from educators. A procedure meant to improve the effectiveness, precision, and impartiality of academic evaluations. Descriptive answer evaluation has always been a labor-intensive, subjective process that is prone to human error and inconsistency. As a solution in this paper a method is proposed that evaluates the students handwritten answer scripts automatically applying Deep Neural Networks and Natural Language Processing Models. Initially the text is extracted using Convolutional Neural Network (CNN) with handwritten answer script image as input. It then uses a BERT (Bidirectional Encoder Representations from Transformer) to extract keywords and summarize long answers using GPT-3(Generative Pertained Transformer model). The proposed method, which extracts text from the students' answer scripts and model answers file, has also been seen to assign the marks that are typically identical to that of manual evaluated marks. The score is determined by the retrieved.