



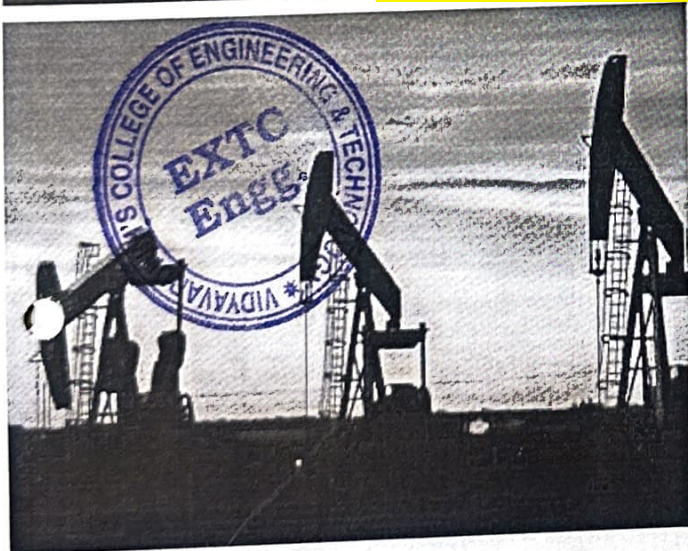
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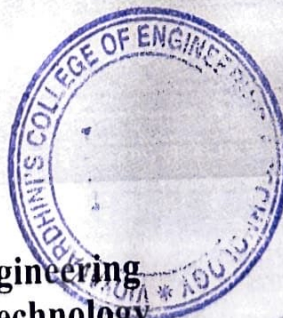
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[SEGT-24]

Image Classification Using Visual Semantics Embedding

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Research in image classification has been booming over the past few years and the need to detect and recognize images using computer vision has increased enormously. Modern visual recognition systems usually cannot scale to immense object categories or classes. This limitation is emerging due to the dataset's ever-increasing object categories and data sequel. Due to which the system cannot classify data because of its insufficient training datasets in the form of labeled images. This project proposes a remedy to solve the above problem by leveraging data from other sources such as text data and training the visual model with the text data model i.e. the semantic model and making available the top five nearest predictions to the input data. The proposed model contains a pre-trained model for feature extraction of the input images and a pre-trained language model having thousands of word vectors that are mapped together to find its semantics analysis to get the nearest word vector predictions as the output. The above solution will not only help in image recognition but also will help in identifying the unseen classes of the images, which were not included in the training dataset.

Keywords: visual model, semantic model, making nearest predictions, feature extractor.

[SEGT-25]

Rapid Upper Limb Assessment (RULA) Modelling of Pilgrim Posture during the Kanwar Yatra

Sachin Rathore, Rishabh Kumar Verma, Pranav Sharma, Rishabh Singh, Tushar Kohli, Saurabh Kumar

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Ergonomics is the science of designing tools, gadgets, and systems to fit the human body and its capabilities. The posture of humans is an important component of ergonomics because it can have a significant impact on their health and well-being. The Rapid Upper Limb Assessment (RULA) is a technique used in ergonomic research to assess the likelihood of developing musculoskeletal disorders (MSDs) in the upper limbs. The RULA approach involves evaluating the upper limb, neck, and trunk postures and assigning a score to each posture based on the degree of risk for MSDs. This study focused on the posture risk assessment of the Kanwar holding posture during the Kanwar Yatra performed by devotees. Data was collected from a sample of 12 individuals of varying ages using a questionnaire survey, anthropometry data, and posture data. The RULA evaluation was then applied to the data using CATIA-V5 software to perform the risk assessment of MSDs. The results indicated a high risk of developing MSDs due to the repetitive and awkward posture involved in carrying the Kanwar. This study highlights the need for modification in the current design of the Kanwar system to reduce the risk of developing MSDs among Kanwariyas. Ergonomic design modifications such as redesigning the Kanwar, modifying the support points, and providing stands can be implemented to make the activity safer and healthier. Overall, this study underscores the importance of ergonomic considerations in the design of tools, gadgets, and systems to promote the health and well-being of humans.

Keywords: RULA; Ergonomic; Kanwar yatra; MSD; Posture



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