

A Systematic Approach in Transforming Inscriptions into Modern Text – Review

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Abstract

Inscriptions are the part of history all over the world. The information on the inscriptions are very important to the mankind, but understanding and transforming it is need of today as epigraphists are in extinct condition. Many researches are voted for the restoration, segmentation, and classification of such inscriptions and it is still in progress. In making an attempt, a transformation system is proposed which Normalizes, Segments and classifies the characters on the inscriptions to modern readable characters.

Keywords: *Inscriptions; Estampages; Kurtosis; Mamdani Fuzzy Classifier; Artificial Neural network; Decision tree; Bayesian Network; Nearest Neighbor clustering; Transductive Support Vector Machine*

1. Introduction

Communication plays an important role in exchanging information. We use email, phone Calls, messages, and letters to pass on the information and make sure that it reaches in an effective way to the recipient. In case of exchanging information on a large scale to a wide range of people - mass communication via Television, Satellite and Telephone play foremost role. Centuries ago, Kings used to mass communicate their achievements, donations and important acumen via inscriptions on copper plates, palm leaves and also on the rock bed. The scripting language used mainly depends on the region and century they belong to. Now in current scenario, reading and understanding such inscriptions by common man is almost impossible. To understand the gist associated with the inscriptions, we need an expert epigraphist who is seldom found. Across the world, automation of inscriptions are in high demand to know the meaning and also to convert the inscriptions to modern readable languages for the future mankind.

The transformation of the inscription has to undergo measures of digital image processing. The eminence of the inscriptions is deteriorated due to ageing, constant effects of sunlight, rain, storage place and material used. To enhance its features and to remove outliers the filtering techniques are applied as a preprocessing technique. Binarization method is applied on the input image to highlight the foreground statistics. Segmentation is a process of dividing the input image into meaningful lines and then into characters for the automation of the optical character recognizer. Finding the features of the characters, extracting them to store as training and testing data set helps in finding and converting the input - inscriptional image into modern readable characters.

In spite of several works carried out on the field of document analysis and transformation, continuous research is in progress all over the world on inscriptions available locally as they can easily understand the language. The list goes beyond with the names like, Greece, Italy, Thailand, Srilanka, Indonesia, America and India. Majority of

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