**Capstone Project**

**Zeroth Review**

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**Proposed Idea I: Automatic speech recognition system of low resource Malvi language**

**Title**: Malvi Transcription Model

Malvi is a low-resource language spoken widely in western Madhya Pradesh and southeastern Rajasthan, deeply rooted in the Malwa region. It holds significant cultural and linguistic value, reflecting the richness and diversity of this regional dialect. Despite its extensive use, Malvi remains underrecognized and underrepresented in both linguistic research and technology.

To address this gap, the "PROJECT" aims to develop an Automate Speech Recognition (ASR) system for Malvi. This system will process spoken Malvi and generate accurate text transcriptions, while also providing metrics that indicate the accuracy of the transcriptions. The project involves creating a comprehensive corpus—a dataset of audio recordings and text in Malvi, collected from native speakers.

The ASR system will employ an end-to-end speech recognition approach to ensure high-quality performance. To evaluate the system's effectiveness, we will use two key evaluation parameters:

1.Word Error Rate (WER

2.Character Error Rate (CER

The "PROJECT" is designed to benefit the Malwa region's residents and cultural enthusiasts by enhancing communication capabilities and supporting the preservation of the Malvi language. By improving access to technology and resources for Malvi, the project will contribute significantly to the linguistic and cultural enrichment of the region.

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### **Proposed Idea II: Bhasha Sangam - Regional Language Translator (Bundeli and Malvi)**

**Title:** **Bhasha Sangam: Hindi to Bundeli and Malvi Language Translator**

**Project Overview:**

The "Bhasha Sangam" project is a proposed solution designed to develop a Natural Language Processing (NLP)-based translator that offers users the choice to convert Hindi sentences into either Bundeli or Malvi, two significant regional languages of Central India. This project aims to address the cultural and linguistic diversity of the region, where both Bundeli and Malvi serve as vital modes of communication.

**Bundeli:**

Bundeli is predominantly spoken in the Bundelkhand region, which spans across parts of Madhya Pradesh and Uttar Pradesh. This language, with its rich history and cultural heritage, is integral to the identity of the Bundelkhand region. Despite its widespread use, there is a lack of technological tools to assist in the translation of Hindi to Bundeli. Bhasha Sangam is proposed as a solution to fill this gap, enabling more effective communication and preservation of the Bundeli language.

**Malvi:**

Malvi is widely spoken across the Malwa region, covering districts in Rajasthan such as Jhalawar, Kota, Banswara, and Pratapgarh, and extending into parts of Madhya Pradesh, including Agar, Dewas, Dhar, Indore, Jhabua, Mandsaur, Neemuch, Rajgarh, Ratlam, Shajapur, and Ujjain. As an Indo-Aryan language and a dialect of Rajasthani, Malvi is a key linguistic identity of the region. Bhasha Sangam will support the translation of Hindi into Malvi, preserving the linguistic richness of this dialect.

Bhasha Sangam is designed to bridge the linguistic gaps in Central India by providing a reliable tool for translating Hindi into Bundeli and Malvi. This project not only enhances communication but also plays a crucial role in preserving the cultural and linguistic heritage of the Bundelkhand and Malwa regions.