Bangla Sign Language Recognition with Skin Segmentation and Binary Masking

**Summary:**

The thesis paper proposes a system for recognizing Bangla Sign Language (BdSL) through the segmentation of hand gestures, binary masking, and SVM classification. The system uses a carefully curated dataset and extracts 18 different features of hand gestures for each of the 10 alphabets in BdSL. The system achieves an accuracy of 99.8% for static hand poses using multiclass SVM classification. The system is designed to be computationally less complex and cost-efficient, making it suitable for double-handed gesture recognition in any sign language.

**Advantages:**

1. The system achieves a high accuracy of 99.8% for static hand poses.
2. The system uses a carefully curated dataset and extracts 18 different features of hand gestures for each of the 10 alphabets in BdSL.
3. The system is designed to be computationally less complex and cost-efficient, making it suitable for double-handed gesture recognition in any sign language.
4. The system resolves the sensitivity to the change in ambient light by converting the data into binary images before performing the necessary application.

**Disadvantages:**

1. The system is limited to recognizing static hand poses and does not account for dynamic gestures.
2. The system is tested on a small dataset and may not be representative of real-world scenarios.
3. The system may not generalize well to other sign languages as it is specifically designed for BdSL.
4. The system may require additional preprocessing steps for accurate skin segmentation in different lighting conditions.

<https://www.researchgate.net/publication/339652786_Bangla_Sign_Language_Recognition_with_Skin_Segmentation_and_Binary_Masking>

CODE:

[GitHub - ankangd/BanglaSignLanguage: The dataset contains images of 10 different Bangla (Bengali) sign letters.](https://github.com/ankangd/BanglaSignLanguage)