AI-Based ASL Fingerspelling Recognition Using the Google Kaggle Dataset for Automated Kiosk Transactions

A Literature Review and Project Application

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Introduction

- According to Ethnologue (2023); Mitchell et al. (2006), there are at least 1 million if not more American Sign Language (ASL) users in the United States alone who are a part of the Deaf and Hard of Hearing (DHH) community.
- Fingerspelling is a critical component of ASL and other sign languages, and is used to spell out words, names, and proper nouns that lack direct signs.
- Current recognition solutions for ASL, don't include fingerspelling, and typically don't work effectively in the real world.
- Legal concerns from the largest and most used ChicagoWild/+ dataset, have made it difficult for commercial application.
- A new dataset released on Kaggle by Google (Manfred Georg et al., 2023) has provided a new opportunity to explore how applying AI could improve, assist, and provide options to the lives of the DHH and the wider community?

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Methodology

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Technical Analysis
- Conducted
- Item 2 in the first list

Background Research
- Item 1 in the second list
- Item 2 in the second list

Results: Tables

- Ased Aliquet Luctus Lectus

Table: Table caption.

Treatments	Response 1	Response 2
Treatment 1	0.0003262	0.562
Treatment 2	0.0015681	0.910
Treatment 3	0.0009271	0.296

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Table: Another table caption.

Location		
East Distance	West Distance	Count
100km	200km	422
350km	1000km	1833
600km	1200km	890

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Results: Figure

Technology and Tools Overview

Discussion

Conclusions

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Acknowledgements

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