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AI-Based Sign Language Translator

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Abstract: *Artificial Intelligence (AI) has significantly transformed accessibility and decision-support systems in education and communication. This research presents an integrated AI-based framework consisting of two major components: a* ***Sign Language Translator*** *and a* ***Personalized Career Recommendation System****. The sign language translator utilizes computer vision and machine learning to interpret gestures of hearing- and speech-impaired individuals and convert them into spoken or textual language in real time, thereby bridging communication barriers. The second component employs data-driven machine learning models to analyze student performance, interests, and personality traits to provide personalized career recommendations. By combining accessibility tools with intelligent career guidance, the proposed system aims to promote inclusivity, reduce career confusion among students, and support data-driven institutional decisions. The system also offers dashboards, interactive tools, and feedback mechanisms to continuously improve recommendations. The research demonstrates how AI-driven solutions can enhance communication, improve career awareness, and support educational institutions in strategic planning.*

Keywords: Artificial Intelligence, Sign Language Recognition, Machine Learning, Career Recommendation System, Inclusive Education, Data-Driven Decision Making

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