Artificial Intelligence for Business  
Decisions and Transformation

**Team Members:**

**Angel Antony**

**Arya Krishnan**

**Prasant Pradeep**

**Real-Time Sign Language Recognition System**

The Real-Time Sign Language Recognition System project aims to develop an advanced AI-based solution capable of accurately interpreting sign language gestures in real time. This system is designed to bridge communication gaps for the deaf and hard-of-hearing communities by converting sign language into text or spoken language.

**1. Assemble Teams**

In the development phase, effective team assembly is crucial for the successful execution of the Real-Time Sign Language Recognition System. Each team member will have specific roles and responsibilities, ensuring clarity and accountability:

* **Project Manager**: The Project Manager will oversee the entire development process, aligning team activities with strategic objectives and managing timelines. They will facilitate communication among team members and ensure that project milestones are met.
* **Development Team**: This team, consisting of software developers and data scientists, will focus on coding the AI algorithms, implementing the sign language recognition model, and developing a user-friendly interface. They will utilize programming languages such as Python and frameworks like TensorFlow and OpenCV for model training and implementation. This will involve selecting appropriate datasets for training and validation, optimizing the model for real-time performance, and integrating the model into a seamless application.
* **Marketing Team**: Tasked with promoting the system, the marketing team will create promotional materials and manage digital marketing efforts. They will develop targeted campaigns on platforms like Instagram and Facebook, aimed at raising awareness within the deaf and hard-of-hearing communities. The team will also engage in partnership development to collaborate with organizations that support these communities.
* **Community Liaison**: This role involves actively engaging with the deaf and hard-of-hearing community to gather insights, feedback, and foster partnerships. The Community Liaison will organize workshops and feedback sessions to ensure the system meets users' needs effectively.
* **User Experience (UX) Specialist**: The UX Specialist will focus on designing an intuitive and user-friendly interface. They will conduct usability tests with real users and gather feedback to refine the user experience continually. This will include creating wireframes and prototypes and iteratively testing them to identify areas for improvement.

Regular bi-weekly meetings will facilitate open communication among team members, ensuring alignment on progress, challenges, and necessary adjustments.

**2. Implement Tools**

To enhance our development efficiency and align with project goals, we will implement the following tools and systems:

* **Project Management**: Azure DevOps will be employed for task management, sprint planning, and tracking project timelines. This platform allows for effective collaboration among team members, ensuring transparency and accountability.
* **Development Tools**:
  + **Programming Languages**: Python will be the primary language for developing the AI model. Key libraries will include TensorFlow for deep learning and OpenCV for image processing and real-time recognition.
  + **Version Control**: GitHub will be utilized for source code management, allowing the team to collaborate efficiently and manage code revisions systematically.
* **Marketing Tools**:
  + **Digital Advertising**: Google Ads and Facebook Ads will be used for targeted marketing campaigns, helping us reach our intended audience effectively.
  + **Email Marketing**: Mailchimp will be deployed for user engagement and feedback solicitation, allowing us to maintain communication with our users.
* **User Analytics**: Google Analytics will be integrated to track user engagement metrics, such as session duration and feature utilization, providing insights into user behavior and areas for improvement.

Each of these tools will be evaluated regularly to ensure they remain aligned with our project objectives and contribute to overall efficiency.

**3. Pilot Testing**

Conducting pilot tests is essential for assessing the system's functionality and user acceptance before full-scale implementation:

* **Small-Scale Testing**: A select group of users from the deaf and hard-of-hearing community will participate in the pilot phase. This testing will provide insights into real-world performance, usability, and acceptance of the system.
* **Feedback Collection**: Following the pilot, surveys and feedback sessions will be conducted to gather user experiences and suggestions for improvement. This data will be critical in refining the system, addressing any identified issues, and enhancing user satisfaction.

**4. Monitor Progress**

To ensure the project remains on track and achieves its objectives, we will establish Key Performance Indicators (KPIs) to monitor development progress:

* **Development KPIs**:
  + **Code Commit Frequency**: This metric will help track development activity and ensure the team is making consistent progress.
  + **Usability Issues Reported**: Tracking the number and severity of usability issues reported during testing phases will help identify areas needing attention.
* **User Engagement KPIs**:
  + **User Adoption Rates**: Measured by the number of downloads or registrations post-launch, this metric will indicate the system's acceptance in the target community.
  + **User Engagement Metrics**: Metrics such as session duration, features used, and user feedback scores will provide insights into how effectively the system meets user needs.

Regular monitoring of these KPIs will facilitate timely adjustments to strategies and resource allocation, ensuring alignment with project goals. This structured approach will help us create a robust and effective sign language recognition system that significantly benefits the deaf and hard-of-hearing communities