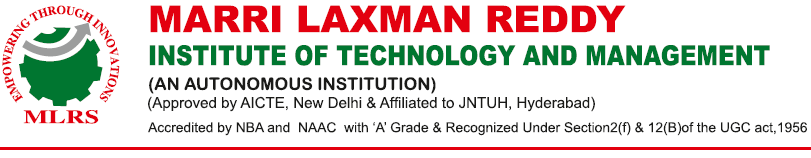
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Institution’s Innovation Repository

**Idea/Proof of Concept (PoC) & Innovation/Prototype Submission Form**

|  |  |  |
| --- | --- | --- |
| **S.NO** | **Field Name** | **Description** |
| **1** | **\*Title** | Gesture and Sign language translation |
| **2** | **\*Developed as part of** | -Academic Requirement/Study Project |
| **3** | **\*Choose the Financial Year, during the Idea- PoC/Innovation Developed** | 2024 |
| **4** | **\*Sector / Domain** | -Software - Mobile App Development  -Software - Web App Development |
| **5** | **\*Innovation Type** | -Product  -Service |
| **6** | **\*Development Stage - Technology Maturity of the Solution/Innovation in terms of Technology Readiness Level TRL** | **TRL 3:** Applied research. First laboratory tests completed; proof of  concept |
|  | **If TRL 3 and below: Exclude 7, 8, 9, 21, 22, 23, 24** | |
| **7** | **\*Development Stage - Technology Maturity of the Solution/Innovation in terms of Technology Readiness Level TRL** | **TRL 4:** Small scale prototype built in a laboratory environment ("ugly" prototype) |
| **8** | **Development Stage - Manufacturing Maturity of the Solution/Innovation in terms of Manufacturing Readiness Level** | **MRL 5:** Capability to produce prototype components in a production relevant environment |
| **9** | **Development Stage: Investment Readiness Level of the Solution/Innovation (IRL)** | **IRL 4:** Prototype Low-Fidelity Minimum Viable Product (MVP): “Low- fidelity” - A representative of the component or system that has limited ability to provide anything but initial information about the end product. |
| **10** | **\*Define the problem and its relevance to today's market**  **/ society / industry need.** | Effective communication with individuals with hearing impairments remains a challenge in many sectors, including education, healthcare, and public services. There is a pressing need for real-time translation tools to bridge the gap between ASL users and those unfamiliar with sign language, enhancing accessibility and inclusivity. |
| **11** | **\*Describe the Solution / Proposed / Developed** | The proposed solution is a real-time gesture and sign language translation system that converts ASL signs and gestures into text using computer vision and machine learning. Utilizing MediaPipe, OpenCV, and TensorFlow, it processes live webcam input, providing immediate, accurate translations and facilitating communication. |
| **12** | **\*Explain the uniqueness and distinctive features of the (product / process / service)**  **solution.** | The system's distinctiveness lies in its real-time processing, adaptive learning capabilities, and comprehensive ASL dataset. It offers high accuracy in gesture recognition, user-friendly interfaces, and the ability to continually integrate new signs, ensuring up-to-date translations and broad applicability. |
| **13** | **\*How your proposed / developed (product / process / service) solution is different from similar kind of product by the**  **competitors if any** | Unlike competitors, this solution uniquely combines advanced hand landmark detection with a deep learning model for real-time, adaptive translation. Its modular design allows easy integration of additional gestures and languages, making it highly customizable. Furthermore, its focus on real-time feedback and continuous learning sets it apart, providing a more responsive and versatile tool for diverse communication needs.  Top of Form  Bottom of Form |
| **14** | **\*Is there any IP or Patentable Component associated with the**  **Solution?** | NO |
| **15** | **\*Has the Solution Received any Innovation Grant/Seed fund Support?** | NO |
| **16** | **\*Are there any Recognitions (National/International) Obtained by the Solution?** | NO |
| **17** | **\*Is the Solution Commercialized either through Technology Transfer or Enterprise**  **Development/Start-up?** | NO |
| **18** | **\*Had the Solution Received any Pre- Incubation/Incubation**  **Support?** | NO |
| **19** | **Video URL** | Specify the Video URL of your innovation. Give necessary permission to view the file to the following email id:  iic.mhrd@aicte-india.org, iic@mlritm.ac.in |

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| --- | --- | --- |
| **20** | **Upload Photograph: (JPG, PNG max 2 MB)** | Include the photograph of your innovation if any. (JPG / PNG : max 2 MB) |
| **21** | **\*Utility: Highlight the utility/value proposition (key benefits) aspects of**  **the solution/innovation\*** | The gesture and sign language translation system  provides a vital communication bridge for individuals with hearing impairments, enabling seamless interaction in various settings. It enhances accessibility by converting ASL and common gestures into readable text in real-time, fostering inclusive communication in education, workplaces, and public spaces. |
| **22** | **\*Scalability: Highlight the market potential aspects of the Solution/Innovation (Potential Market Size, segmentation and Target**  **users/customers etc.)** | The solution has vast market potential, targeting the 70 million deaf individuals worldwide and the broader audience seeking to learn ASL. It can be scaled to include additional sign languages, expand into educational tools, and integrate into various digital platforms, catering to diverse users. |
| **23** | **\*Economic Sustainability: Highlight commercialisation/business application aspects of the solution (how it is going to economic profitable and**  **viable)** | The system's commercialization includes licensing to educational institutions, healthcare providers, and public service organizations. Its economic viability is bolstered by the growing demand for accessibility technologies, offering subscription-based services, custom integrations, and potential ad-based revenue streams. |
| **24** | **\*Environmental Sustainability: Highlight environmental friendliness aspects and related benefit**  **of the solution/innovation** | The solution is environmentally friendly, requiring minimal physical resources as it operates on digital platforms. By reducing the need for printed educational materials and facilitating remote communication, it contributes to lowering carbon footprints and promotes sustainable practices in digital communication. |

NOTE:

Once your Idea/PoC is submitted, then Team leader can add the Team Members and Mentor details.

**Evaluation Criteria Sheet for Idea/PoC Submission**

|  |  |  |
| --- | --- | --- |
| **S.NO** | **Evaluation Parameter** | **Maximum Marks** |
| 1 | Right Identification of the Problem (Appropriate selection of the problem)? | 25 |
| 2 | Relevance of the Solution (Adequately addressing the problem/need)? | 25 |
| 3 | Quality Features of the Solution (Distinctive features of the solution)? | 25 |
| 4 | Uniqueness of the Solution (Intellectual Property Component)? | 25 |

**Evaluation Criteria for Innovation/Prototype Submission**

|  |  |  |
| --- | --- | --- |
| **S.No** | **Evaluation Parameter** | **Maximum Marks** |
| **1** | **Achieving Fit: Problem – Solution Fit (Appropriate and adequacy of the solution to meet the problem)?** | **20** |
| **2** | **Quality Features and Uniqueness of the Solution/Innovation (Intellectual Property/Distinctive Features of the Solution)?** | **20** |
| **3** | **Achieving Fit: Product - Market Fit (Technology Readiness level (TRL) and Manufacturing Readiness Level (MRL) of the innovative solution)?** | **20** |
| **4** | **Feasibility of the Solution/Innovation (SMART: Specific, Measurable, Attainable, Realistic, Timeline)?** | **20** |
| **5** | **Applicability of the Solution/Innovation (Usability,**  **Scalability, Economic and Environment Sustainability)?** | **20** |