**Risk Register:**

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| **ID** | **Risk** | **Risk Description** | **Likelihood** | **Impact** | **Severity** | **Owner** | **Mitigation** | **Status** |
| 1. | Dataset Quality | Little quantity and low-quality of dataset can make prediction inaccurate. | High | High | High | Data Scientist | Using augmented d, diverse and labeled dataset and also verifying quality of dataset during pre-processing of dataset. | Open |
| 2. | Real-Time Performance | Product fails to get low latency in real-time recognition. | Medium | High | High | Sameer Basnet | Optimizing and Simplifying pipeline and module and testing in different hardware. | Open |
| 3. | Gesture Recognition Accuracy | Unreliable recognition of gestures because of hand variability or poor lighting. | High | High | High | Sameer Basnet | Using data augmentation trained model with various samples and Appling adaptive histogram equalization for lighting adjustments. | Open |
| 4. | Tool/Library Compatibility | Compatibility problems with software libraries on specific hardware. | Medium | High | High | Sameer  Basnet | Using optimized tools, test libraries on target hardware early, and document dependency versions. | Open |
| 5. | Integration Issues | Complication while integrating hand detection, recognition, and text output into a smooth pipeline. | Medium | High | High | Sameer Basnet | Developing and testing every component first, using modular coding practices, and performing regular integration testing. | Open |
| 6. | Scalability Challenges | Complication while adding new gestures or expanding functionality. | Low | Medium | Low | Sameer Basnet | Using modular design for adding new gestures, maintaining clean documentation, and adopting to scalable framework. | Open |
| 7. | Timeline Overruns | Setbacks due to unexcepted technical problems or expanded scope. | Medium | High | High | Sameer  Basnet | Using Agile methodology for iterative progress, prioritizing crucial features, and building eventually time into the project plan. | Open |
| 8. | Hardware Dependency | End-users may short come access to high-quality webcams or sufficient computational resources. | Medium | Medium | Medium | Sameer  Basnet | Ensuring product runs on basic hardware setups and provide hardware recommendations. | Open |
| 9. | User Acceptance | Users finding the product complicated or inaccurate, reducing its usability. | Medium | High | High | Sameer Basnet | Gathering user feedback through testing, providing a user-friendly User Interface, and ensure the system is intuitive. | Open |

**Notes:**

ID values may be useful to refer back to in your final documentation. Number these in order. This register should be included in the appendix

Risk description provides an outline of the issue

Please use Low, Medium and High to identify the risk level and colour code.

Typically the owner will be you, but it maybe the case in team work or other projects that have external clients, other activities may impact on the project

Mitigation implies on how you will manage the risk and to reduce the likelihood of it occurring

Status – has the risk event now passed. It should indicate an Open and Closed status.