**PROJECT PLAN DOCUMENT**

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| Project number | 28 |
| Project Title | 3D Point Cloud Variation Measurement |
| Document | Project Plan |
| Creation date | 31st January 2020 |
| Created By | Harshika jain |
| Client | Mr. Anil Kumar Upadhyay, Mrs. Chitralekha Upadhyay, Five Fingers Innovative Solutions |

# **Brief problem statement**

We live in a world of 3 space dimensions, but most of the pictorial information we have, be it

photos or videos, are 2-D. We have gotten accustomed to getting information in 2-D format. All

automation in the field of processing photos and videos to get useful data has only been for 2-D.

There is a need for automation in processing of 3-D photos and videos.

# **Team Members**

Harshika Jain

Shivam Nayak

Sonu Guru

Subodh Sondkar

# **Team Communication**

We generally communicate via whatsapp group and phone calls. We discuss about the work provided by the client after every client meet. For implementation we meet at workspace.

**Development Environment**

For object identification, we shall have to use opencv. Opencv is a library in c++ and python. An STL file is provided containing point cloud of the object. For extraction, removal, boundary detection, and variation measurement, we can use MLX, a python library for Meshlab, or Cloudcompare scripting. To do work as a team we use gitlab to push all the documents and code.

# **Milestone Schedule**

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| --- | --- | --- | --- |
| **Milestone** | **Due Date** | **Release** | **Deliverable?** |
| Create draft requirements | 01-02-20 | R1 | No |
| Finalize requirements | 22-01-20 | R1 | Yes |
| Study up on the basic concepts | 21-01-20 | R1 | No |
| Find out the system requirements | 21-01-20 | R1 | No |
| Use the specified technologies to have basic idea | 26-02-20 | R1 | No |
| Create an SRS document | 01-02-20 | R1 | Yes |
| Write a script to identify object from the image |  | R1 | Yes |
| Test the code on the image of different object |  | R1 | Yes |
| Object identification from the image is completed |  | R1 | Yes |
| Find out what all libraries and functions are required to extract point cloud |  | R1 | Yes |
| Write a code to automate the extraction of point cloud from 3D photo |  | R1 | Yes |
| Test the code |  | R1 | Yes |
| Point cloud extraction completed |  | R1 | Yes |
| Write code to identify noise |  | R1 | Yes |
| Test the code to get point cloud without noise |  | R1 | Yes |
| Write a script to identify object from the 3Dvideo |  | R1 | Yes |
| Test the code on different video |  | R1 | Yes |
| Object identification from the video is completed |  | R1 | Yes |
| Write a code to automate the extraction of point cloud from 3D video |  | R1 | Yes |
| Test the code |  | R1 | Yes |
| Point cloud extraction completed |  | R1 | Yes |
| Write code to identify noise from 3D video |  | R1 | Yes |
| Test the code to get point cloud without noise |  | R1 | Yes |
| Write the code to detect variation boundary |  | R2 | Yes |
| Test the code |  | R2 | Yes |
| Write the code for variation measurement |  | R2 | Yes |
| Test the code to measure depression |  | R2 | Yes |
| Variation measurement completed |  | R2 | Yes |
| Provide the client with an automated tool |  | R2 | Yes |