University of Burgundy
Software Engineering

Harris 3D
Mid Term Report

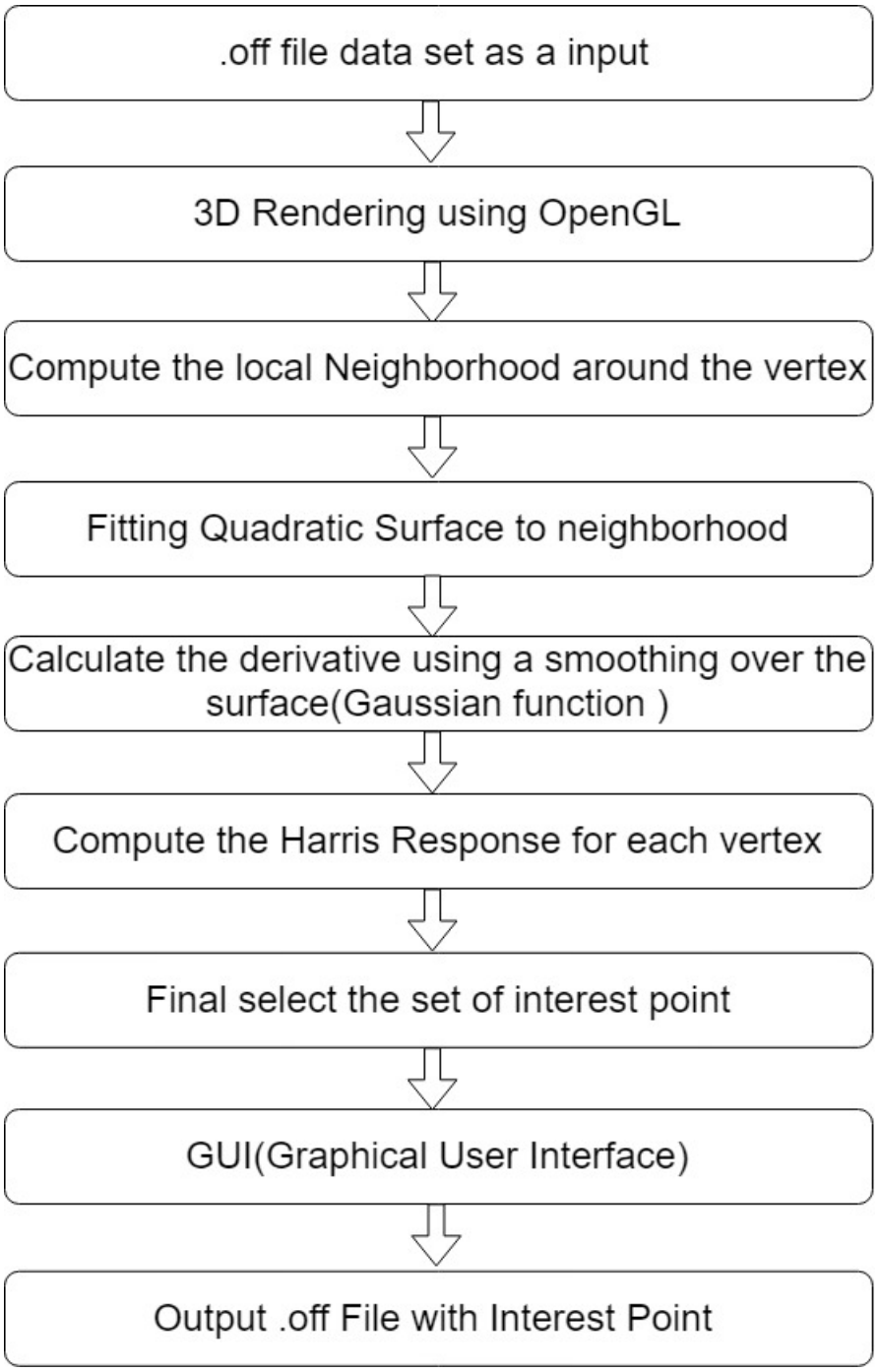
Submitted To:
Dr.Yohan FOUGEROLLE

Submitted By :
Bhargav SHAH
Akshaykumar DUDHAGARA

1 Objective

Our aim is to detect interest point for 3D object based on Harris Operator which has been used with good results in computer vision application. we propose to determine the neighbourhood of the vertex over which the Harris response on vertex is determined.
To achieve our goal first we create our pipeline for understanding and batter result which is given below.

2 Pipeline


.off file data set as a input
3D Rendering using OpenGL
Compute the local Neighborhood around the vertex
Fitting Quadratic Surface to neighborhood
Calculate the derivative using a smoothing over the surface(Gaussian function)
Compute the Harris Response for each vertex
Final select the set of interest point
GUI(Graphical User Interface)
Output .off File with Interest Point

3 Work Done

First, We Read the **Harris 3D: a robust extension of the Harris operator for interest point detection on 3D meshes** and try to understand the input and output result with all mathematical equation. but we couldn't understand the fully mathematical equation now.
second, We installed libraries(cmake, CGAL, GSL) in Ubuntu environment and run existing code and simultaneously we try to install the same libraries in windows also and partially we understood the given Source code as a reference.
We installed **OpenGL** library instead of CGAL library for 3d rendering,**Cmake**for compile the project and **GSL** for solving the problem of eigenvalues.