

**HIGHER TECHNICAL INSTITUTE**

**COURSE IN COMPUTER STUDIES**

**DIPLOMA PROJECT**

**A VIRTUAL REALITY SIMULATION OF A 3D  
RECONSTRUCTION ALGORITHM**

**CS/346**

**CHRISTODOULOS PANAYI**

**8 JUNE 2005**

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**A VIRTUAL REALITY SIMULATION OF A  
3D RECONSTRUCTION ALGORITHM**

**PROJECT REPORT SUBMITTED BY  
CHRISTODOULOS PANAYI**

**In Partial Fulfillment Of The Requirements For The  
Award Of The Diploma In Computer Studies**

**Project Supervisor: Dr. Marinos Ioannides**

**External Assessor: Mr. Marinos Phylachtou**

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## **Summary**

This goal of this project is the development of a software platform that will follow an already existing project of a 3D reconstruction algorithm. The new project will be integrated in the virtual reality development lab of the University of Cyprus.

The existing project uses for input a file that contains a series of 3D points and exports it in different forms like VRML and finally shows 3D points on the screen. Those 3D points are given by a 3D scanner and describe an item with large detail.

In addition to this, the new project will take as input the tetrahedrons of the 3D reconstructed object and with virtual reality the user can be inside of the item and see how the item looks.

In the report that follows the System Development Life Cycle (SDLC) is used to demonstrate and analyze the various activities that are involved with the project. The SDLC is divided into five phases:

- Investigation Phase
- Analysis and General Design Phase
- Detailed Design and Implementation Phase
- Installation Phase
- Review Phase