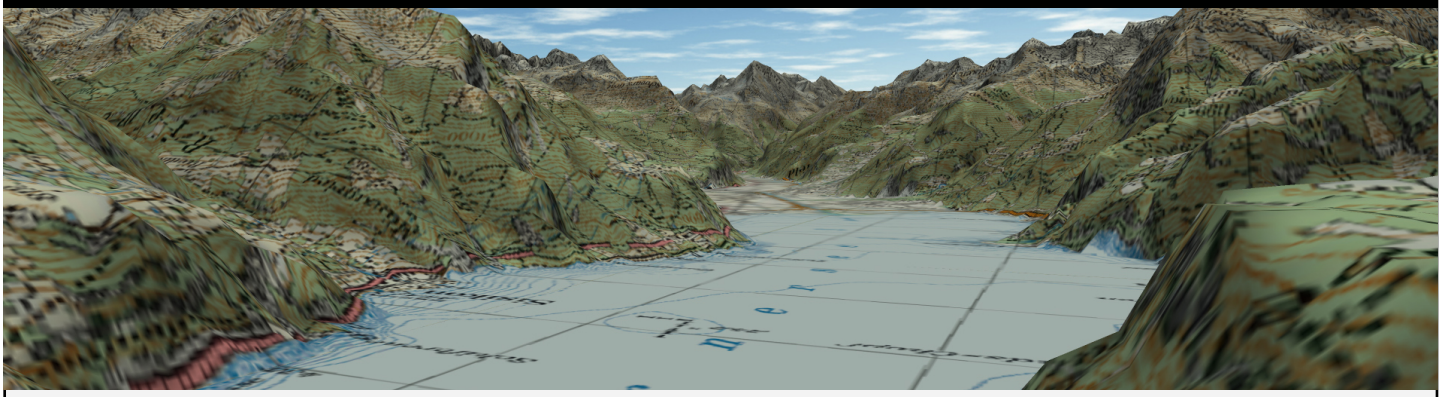
Project **Interactive Graphical 3D Alpine Touring and Trekking Planning Tool**

University of Zurich[UZH]



Topic

In this project an alpine touring planning tool should be developed which allows the user to plan routes over alpine mountain terrain interactively and graphically in a 3D viewing and editing application.

In particular, for winter tours the avalanche information available from SLF should be incorporated graphically into the 3D visualization.

Assignment

On top of a digital terrain elevation model geo-visualization framework, a 3D geo-viewer and track editor should be implemented capable of the following functionality:

1. Interactive map visualization by using web services from SLF.
2. Design a User Interface for handling vector graphics based interaction on top of the terrain rendering.
3. Learn how to build and develop cross platform applications with integrated build environments and port to a mobile platform.
4. Display various track statistics, such as slope, elevation, height profile while interactive editing.
5. Import and export track data to other GPS devices.
6. Integrate a light system to visualize the sun/shadow situation on the terrain to improve track planning. .

At the beginning a thorough planning should be performed with requirements analysis and design options for the software and the graphical viewing and editing too.

Requirements

Interst in advanced computer graphics topics and cross platform development as well as UI desing. Experience in OpenGL (CG Lab done).

Work Load

- 20% theory
- 70% implementation
- 10% testing

Project Type

This project can be done as Software project or Bachelor thesis. Goals are adjusted depending on the project type.

Supervision

Prof. Dr. Renato Pajarola

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Contact

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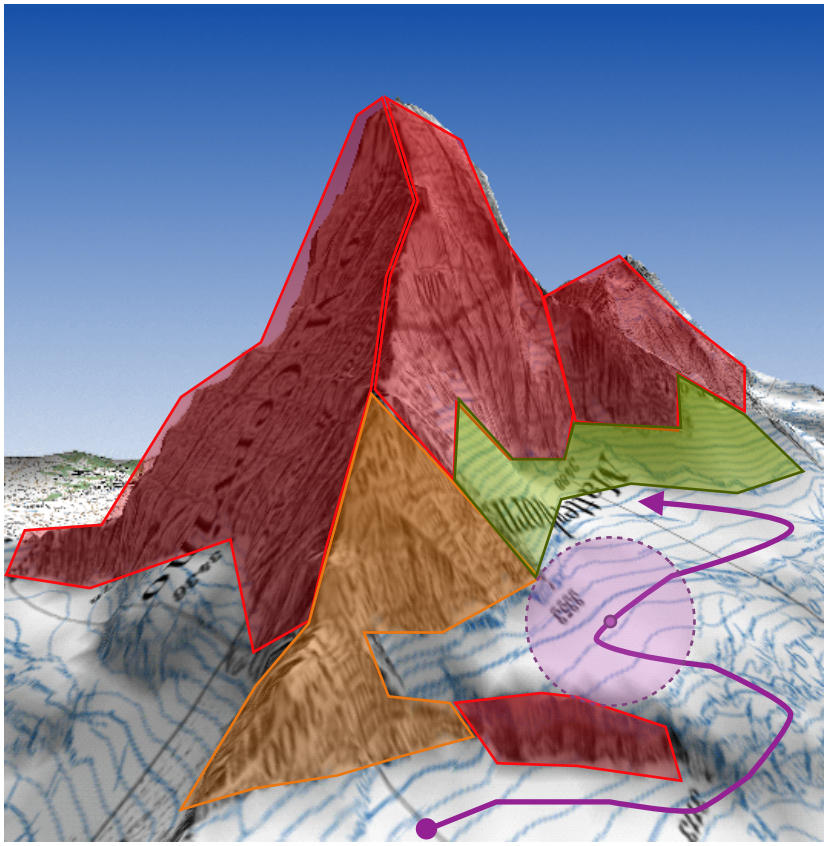

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