LSGI522 Spatial Data Acquisition

Practical 4 – Laser Scanning

Aims

By the end of this practical, students should:

1. Learn the basics of the laser scanning.

2. Be able to work on different modes of Terrestrial Laser Scanner (TLS).

3. Know to export the scanning results into a point cloud.

4. Use the CloudCompare software (https://www.danielgm.net/cc/) to visualize and align point clouds.

Arrangement

1. Group: work in group with **FIVE** to **SIX** people.

2. Location: 6F/ podium, Z block.

3. Data: 18:30 - 21:20, 15th October, Fall 2020.

Materials

1. Tutorials

    a. Practical-4 Laser Scanning

    b. Leica BLK360 step-by step guide

    c. CloudCompare point cloud alignment guidance

Equipment

1. Leica BLK360 and RTC360 laser scanners.

2. Two Ipads

Task

1. Collect at least two overlapping scans of the classroom on the 6th floor in Block Z.

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DEPARTMENT OF
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Assignment Submission

Each group is required to collect at least two overlapping scans while the data will be provided to the groups by email after tutorial.

Each student is required to submit a word file (named with your student (e.g., 18000XX1g.docx) that contains the following:

1. The step-by-step method to visualize and align a pair of overlapping scans.
2. The image of final alignment results.
3. The 3D transformation parameters.

The report must reflect the understanding of each student to the tutorial and copied versions will be deprecated. What you have learned in this practical may be re-assessed in the final exam.

The report should be sent to (myuan.meng@connect.polyu.hk) before the submission deadline.

Submission deadline: 23:59, 29th October 2020