

Final Report

Name of BritInn Fellow: Dr Jan Boehm

Home Department: Civil, Environmental & Geomatic Engineering **Home University:** UCL

Guest Department: Institut für Geographie **Guest University:** Uni Innsbruck

From: 5/11/18 **Until:** 12/11/18

Title of the Research Project: Big Data Analysis platforms for Point Cloud Data Analysis

Report about visit and future plans (max. 200 words, English):

The fellowship was proposed by Dr Martin Rutzinger of Uni Innsbruck (Institut fuer Geographie) and Dr Jan Boehm of University College London (UCL) to explore a collaboration on processing of very large point clouds. In addition shared research interests in the area of machine learning were discussed.

As part of the fellowship a public talk was given by Dr Boehm on the topic of 'Machine Learning and Information Extraction for 3D Data Capture' (<https://www.uibk.ac.at/events/2018/11/06/machine-learning-and-information-extraction-for-3d-data-capture>). The talk presents current research projects at UCL on the automated information extraction from point clouds and photogrammetric images. The presented work focuses on machine learning and details novel applications of deep learning networks.

A workshop was held with members of the Institut fuer Geographie on 7th November to exchange current research interests of the participants. A focus point were issues of point cloud processing, storage and archiving. We want to explore the use of big data tools and general data analytics frameworks to aid the information extraction from very large point clouds. During his stay Dr Boehm conducted a series of mini experiments to explore the viability of this approach and explore useful tools. The experiments are publicly available via GitHub (https://github.com/3Dimaging-ucl/open_lidar_analytics) and we plan to extend them in the future. The experiments can both be used for teaching and as starting point for future research.

Dr Rutzinger and Dr Boehm will continue their collaboration and will jointly chair the international workshop on Laser Scanning in June 2019 (<https://www.gsw2019.org/laserscanning/>)



Picture Credits: Dr Martin Rutzinger