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"BIG (GEO)DATA"

With the rapid developments of digital capture technologies, datasets have grown massively. This is particularly evident for point clouds, i.e. collections of dense three-dimensional point samples across object's surfaces. Modern sensors can capture millions of points per second. National mapping agencies (NMA) offer publicly available dataset with trillions of data points and terabytes of data. Geospatial data analysis is currently still dominated by desktop software systems mostly running some form of GIS software. This state of technology is obviously inadequate when looking at the available data volumes, predicted growth and breadth of analytical questions. It is therefore evident that we need to develop and adapt scalable big data techniques that are specialised on geospatial data and LiDAR point clouds in particular. The processing of massive point clouds needs development at all levels including algorithmic, parallelisation, automation and machine learning to name a few. Recent conferences and workshops have shown progress in most of these areas. Further work on large benchmark datasets will undoubtedly be crucial to shape future developments.

Geospatial data forms the geometric backbone of future technologies such as Smart Cities, Internet of Things and Autonomous Public Transport Systems in addition to classic applications such as Urban Planning and Disaster Management. Geospatial data is not only point clouds but also includes maps, points of interests, building models, DEMs and photos. The fusion or combined analysis of these different data types poses a further big data problem. This is referred to as variety in the often cited 'three Vs' of big data (Volume, Variety and Velocity). This obviously stretches beyond a single ISPRS working group (WG II/3). But a closer inspection of the terms of references of the ISPRS working groups reveals that 'big data' features prominently in a variety of groups in different commissions. In 2015 we held the first Geo Big Data Workshop as part of the Geospatial Week in Montpellier, France. Maybe there can be further iterations of that workshop to bring together big data developments across the full bandwidth of research within the ISPRS community. If interested, get in touch with me!