



## Application of Machine Learning in Geodesy: Prediction, Detection, and Automation

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### Abstract

In recent years, the amount of geodetic data has grown dramatically. In particular, there has been a strong increase in stations and satellites of the Global Navigation Satellite Systems (GNSS). At the same time, there have been significant methodological and computational advances, with the potential to better exploit the growing amount of data for science and society. A major development in this respect has been the success of data science and machine learning, in particular deep learning, in various fields.

In this talk, I will give an overview of the application of machine learning in geodesy. For certain geodetic problems, including parameter prediction, anomaly detection, and automation, machine learning is especially promising. At ETH Zurich, we have put significant efforts in solving such problems with artificial intelligence. I will present examples concerning the detection of discontinuities in GNSS station position time series, the prediction of Earth orientation parameters, and the automation of scheduling very long baseline interferometry experiments.

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