



# GRADUATE LECTURES

This series of lectures aims at Master's and PhD students in mathematics and offers a first glimpse into topics which are not routinely taught in our MSc/PhD programme. The emphasis is to introduce new concepts and techniques, and not to present full mathematical details.

## AN INTRODUCTION TO MACHINE LEARNING

ALESSANDRO CARDERI (Institute of Geometry, TU Dresden)

The aim of this graduate lecture is to give a concise introduction to machine learning. Our focus will be to show that this theory gives rise to many interesting mathematical problems connected to combinatorics, probability theory and the phenomenon of concentration of measure. In particular we will focus on the k-NN algorithm, the nearest neighbor algorithm, and we will sketch a proof of Stone's theorem: the k-NN classifier is universally consistent.

Dates: **27.11. / 04.12. / 18.12.2018**

Time: **15:00 – 16:00**

Raum: **WIL A120**