

## **Geospatial machine learning for ALS in Torino**

Amyotrophic Lateral Sclerosis (ALS) is a rare disease characterized by the degeneration of motor neurons. As a consequence, patients experience the progressive paralysis of voluntary muscles.

ALS is likely caused by the co-occurrence of multiple genetic and environmental factors. The analysis of patients' spatial distribution could give hints on the environmental contribution to the disease pathogenesis.

By analyzing the residential history of ALS patients in Piemonte, we noticed an unexpected number of buildings in which more than one patient had lived.

The aim of the study is to use machine learning techniques to identify which of these buildings more likely did not occur by chance. As a secondary aim, a cluster analysis could be used to identify patterns or relationships amongst the buildings and patients identified.