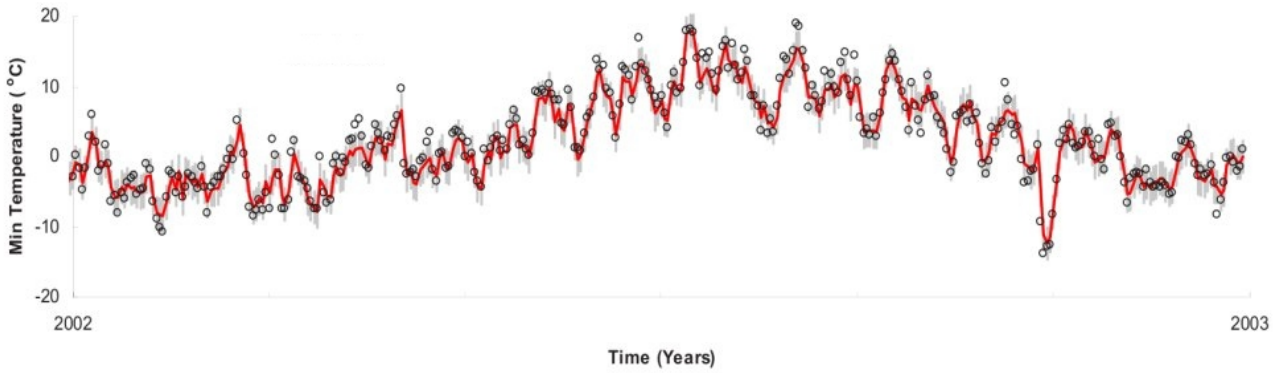

The efficient management of spatiotemporal data has gained much interest during the past few years, mainly due to the rapid advancement in telecommunications which facilitates the collection of large data sets of such information. Management and analysis of moving object trajectories are challenging due to the vast amount of collected data and novel types of spatiotemporal queries. In many applications, the movements obey periodic patterns, i.e., the objects follow the same routes (approximately) over regular time intervals. Objects that follow approximate periodic patterns include transportation vehicles (buses, boats, airplanes, trains, etc.), animals, mobile phone users, etc. The problem of discovering periodic patterns from historical object movements is very challenging. Usually, the patterns are not explicitly specified, but have to be discovered from the data. The approximate nature of patterns in the spatiotemporal domain increases the complexity of the mining tasks.

The classes of techniques that we are proposing to investigate are:

- Clustering, that is discovery of groups of "similar" trajectories. As an example, the cluster of trajectories they can bring to light the presence of paths not adequately covered from the public transit service.
- Frequent pattern, that is the discovery of frequent paths. These information could be useful for the city planning, as an example, evidencing frequently covered paths followed by vehicles, that could be the result of planning of the devoid traffic.
- Classification, that is the discovery of behaviour rules, aiming to explain the behaviour of the running customers and to foretell that one of the future customers. An application could be the pre-allocation of resources.

From the methodological standpoint, the research activity investigates machine learning approaches and specifically neuro-fuzzy models.