Clustering trajectories data, such as trajectories of cars, airplanes, busses, etc. consists of partitioning trajectories into clusters, so that similar trajectories are assigned to “similar” clusters. It finds applications in traffic flow analysis, urban planning and many others. As vehicles move around (e.g. a new bus station is reached by a bus), trajectories are updated accordingly. As trajectories evolve over time, one would like to efficiently maintain a “good clustering” while efficiently handling each update on the trajectory data. Several approaches have been proposed in recent years with the approach in [2] and [1] being among the most recent approaches.

**Main Goal.** The main goal of the internship is to develop an algorithm for clustering trajectories as well as to efficiently maintain a “good clustering” as trajectories evolve over time. The student will first conduct an evaluation of the related work, in particular of [2] and [1]. Both the running time and the quality of the solutions will be evaluated. To this end, observe that the code of the algorithms in [2] and [1] as well as the datasets are publicly available. He/she will then develop an algorithm aiming at improving either the quality of the solution or the running time or both. The project requires excellent coding skills in C, Python or Java.

**Location and supervision.** The internship will last about 4-6 months and it will be supervised by Mauro Sozio (Associate Professor at Telecom Paris University). Telecom Paris is located in Palaiseau (south of Paris). The internship can lead to a PhD thesis (fundings on this or related topics are available).

**References**
