Computing Popular Places using Graphics Processors

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Mobile devices provide the availability of tracking and collecting trajectories of moving objects such as vehicles, people or animals. There exists a well-known collection of patterns which can occur for a subset of trajectories. Specifically, we study the so-called Popular Places, that is regions that are visited by many distinct moving objects. We propose algorithms to efficiently compute different forms of reporting Popular Places, that take benefit of the Graphics Processing Unit parallelism capabilities. We also describe how to visualize the reported solutions. Finally we present and discuss experimental results obtained with the implementation of our algorithms.