

# Inferring paths from anonymized visit events

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Work in progress, based on joint work with  
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# Abstract

In location privacy, a popular method for preventing user identification is to anonymize the visit events that users produce. An anonymized visit event then just becomes a (location, timestamp) pairs that are not linked to each other and are not linked to any user. In this work-in-progress, we aim to reconstruct user paths by linking such visit events together into sequences, each of which can plausibly have been created by the same user. We exploit temporal and spatial proximity of two events to estimate the probability that they have both been created by the same user. The presence of multiple users and multiple events leads to a formulation as a maximum-weight assignment problem. The time dimension of the events seems to necessitate an extension to a multidimensional assignment problem.

This talk is based on joint work with Galini Tsoukaneri, Hugh Leather, and Mahesh K Marina (University of Edinburgh).