

## The shortest path to Sat'

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We develop a methodology to use WiFi traces to detect the sequence of activity episodes visited by pedestrians. Due to the poor quality of WiFi localization, a probabilistic method is proposed that infers activity-episode locations merging WiFi measurements with attractivity and time constraints of activity locations on the map.

This image shows one part of the data we used in our case study, EPFL pedestrian map. Data come from <http://map.epfl.ch>. This website provides locations of offices, restaurants, classrooms, etc. on campus. It also generates itineraries between two such locations. The graph contains 50131 nodes, 56655 edges, and 5387 points of interest.

In order to generate this picture, we connect Satellite (a bar on EPFL campus), with all rooms in campus using the shortest path. The more a path is used, the more red and thick it is. Main axes of EPFL pedestrian network the structure of the Rolex Learning Center (bottom center) appear.

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[1] Danalet, A., Farooq, B., and Bierlaire, M. (2014). A Bayesian Approach to Detect Pedestrian Destination-Sequences from WiFi Signatures, *Transportation Research Part C: Emerging Technologies* **44**:146 - 170. doi:10.1016/j.trc.2014.03.015

More pictures of EPFL WiFi traces, attractivity and pedestrian network can be found on <https://www.flickr.com/photos/antonindanalet>

