

# Identifying touristic places

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From the perspective of our research on geographic recommender systems, the goal of designing “systems and services that can understand ‘place’ in a way we humans do” seems little ambitious and potentially misleading. We argue that we should aim at designing services which are, in a specific sense, better than humans at understanding place. Every individual belongs to one or more social groups and, in general, the ability of humans to understand place conceptualizations from other social groups is rather limited. Geographic recommender systems should outperform humans in the handling of multiple group-specific place models (Matyas & Schlieder, 2009; Schlieder & Kremer, 2012, accepted).

One important consequence of looking at differences in conceptualizations has been pointed out by Schlieder and Henrich (2011). The classical membership problem of place research – does the point X belong to place P – transforms into more complex problems: does user U believe X belongs to P? Do users U and V share similar beliefs about X belonging to P? While this statement seems trivial according to our everyday life experience, its implications on geographic recommending are widely overlooked (Winter et al., 2009). Our talk illustrates the need for more complex place models by analyzing data about touristic conceptualizations of urban spaces derived from a recent GPS tracking study of touristic exploration behavior.

The data set is based on behavioral data from 17 first time visitors to the town of Bamberg, Germany, who came for a one-day-trip and volunteered to participate in the study. They were handed a camera equipped with GPS and a magnetic compass, as well as a second GPS receiver with better positional accuracy for recording the track data. The participants were told to explore the town in whatever way they liked and for how long as they pleased. A first analysis of the data is based on two dependent variables, the number of photographs taken in different regions of interest and the time the visitor spent there. We describe two marginal return models for place popularity, one based on photograph frequency, the other based on visit time. Individual differences in spatial choices are compared using these models.

A first group of findings relates to individual differences in the popularity of places while a second group of findings concerns the exploration strategies employed by the visitors. Within the former, we found that time-based and photograph-based measurements of interest in a place may significantly differ. We hold that this reflects a place’s affordance for tourist activities. The popularity of some places is linked to their visual attractiveness while other places lend themselves for dwelling. In the analysis of the data, we use extended periods of zero motion speed as an indicator for dwelling behavior and the photographing

activity as an indicator for touristic attention. We found that tourists which move along nearly the same track, are likely to photograph different sights. Conversely, people that happen to catch the same glance will add semantics to it only according to their specific background, interests or even other places visited before. Based on our findings, we suggest the following (partial) answer to the workshop challenge of automatically detecting the location of things based on behavioral data:

- At least for most touristic places, there is no universally accepted location of the place that could be determined by machines (or by humans). Different place conceptualizations tend to coexist. The town of Bamberg, for instance, can be conceptualized as the beer capital of Bavaria or as the Unesco world heritage site of Baroque architecture or in many other ways.
- However, it is possible to analyze the spatial – and the thematic differences – of place conceptualizations by looking at data from close monitoring studies involving GPS tracks and photographs taken by visitors.
- We argue that the task of automatically detecting the location of a touristic place should not just map a place name onto a single geographic footprint, but rather on a set of footprints, different for different communities and different for different activities.

## References

- Matyas, C., & Schlieder, C. (2009). A spatial similarity measure for geographic recommender systems. In K. Janowicz, M. Raubal, & S. Levashkin (Eds.), *Geos-09, proc. geospatial semantics* (pp. 122–129). Berlin: Springer.
- Schlieder, C., & Henrich, A. (2011). Spatial grounding with vague place models. *SIGSPATIAL Special Issue on Geographic Information Retrieval*, 3(2), 20–23.
- Schlieder, C., & Kremer, D. (2012, accepted). The cultural tourist's consumption of place: game or play? In *32nd international geographical congress, session on tourism mobilities and urban spaces*.
- Winter, S., Kuhn, W., & Krüger, A. (2009). Guest editorial: does place have a place in geographic information science? *Spatial Cognition and Computation*, 9(3), 171–173.