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Context-aware services based on spatio-temporal zoning and crowdsourcing (Article)

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Abstract

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Crowdsourcing offers great opportunities to recognise user context and prescribe relevant services for both offline and real-time activities. In this work, we present a zoning model that leverages spatio-temporal dimensions and then employs different contexts to recommend necessary customised services. The context model takes into consideration three context sets: fully restricted, fully unrestricted and semi-restricted with respect to both spatial and temporal dimensions. As a proof of concept, we apply this zoning model in a scenario where a very large crowd get together to perform spatio-temporal activities. The user context of the heterogeneous crowd is captured using the carried smartphones, i.e. via crowdsourcing. Depending on the context sets and zone, the system can recommend a set of services to each user. The system has been deployed since 2014 to support the spatio-temporal activities of a very large crowd. We present our implementation details and the user feedback, which is very encouraging. © 2018, © 2018 Informa UK Limited, trading as Taylor & Francis Group.

Author keywords

context-aware services | Crowdsourcing | Hajj and Umrah | spatio-temporal zones | system usability

Indexed keywords

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Engineering uncontrolled terms: Context aware services | Context modeling | Hajj and Umrah | Spatio temporal | Spatio-temporal activities | Spatio-temporal dimensions | System usability | Temporal dimensions

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