LEYE WANG

Leye WANG is currently pursuing his Ph.D. at the Institut Mines-Télécom/Télécom SudParis, France, with the Chinese Government Scholarship. He received his B.Sc. and M.Sc. in computer science from Peking University, China. His research interests revolve around the analysis and modelling of people-centric sensor data, with specific research topics including mobile crowdsensing, social networks, intelligent transportation systems, etc. He has published 5 first-author papers in referred journals and conferences including IEEE Communications Magazine, IEEE Transactions on Systems, Man, and Cybernetics: Systems, and UbiComp. According to Google Scholar, his works have got more than 130 citations.

"Quality-Guaranteed Online Task Allocation in Sparse Mobile Crowdsensing"

Abstract:
Data quality and budget are key concerns in urban-scale mobile crowdsensing. In this work, we consider spatial and temporal correlations among sensed data to reduce the number of sensing tasks (corresponding to budget), yet ensuring the data quality. We propose a framework, CCS-TA, combining the compressive sensing, Bayesian analysis, and active learning techniques, to select a sparse set of sub-areas for task allocation in each sensing cycle, while inferring the data of unsensed sub-areas under an accuracy guarantee. Evaluations on a real temperature monitoring scenario shows that CCS-TA allocates tasks to only 15.5% of the sub-areas while keeping the inference error below 0.25◦C in 95% of the cycles, outperforming baselines by 18.0-26.5%.