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Pythia: A Privacy-enhanced Personalized Contextual Suggestion System for Tourism

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Title:	Pythia: A Privacy-Enhanced Personalized Contextual Suggestion System for Tourism
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Abstract:	We present Pythia, a privacy-enhanced non-invasive contextual suggestion system for tourists, with important architectural innovations. The system offers high quality personalized recommendations, non-invasive operation and protection of user privacy. A key feature of Pythia is the exploitation of the vast amounts of personal data generated by smartphones to automatically build user profiles, and make contextual suggestions to tourists. More precisely, the system utilizes (sensitive) personal data, such as location traces, browsing history and web searches (query logs), to build a POI-based user profile. This profile is then used by a contextual suggestion engine for making POI recommendations to the user based on her current location. Strong privacy guarantees are achieved by placing both mechanisms at the user-side. As a proof of concept, we present a Pythia prototype which implements the aforementioned mechanisms as mobile applications for Android, as well as, web applications.