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THIRD PRIZE

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Context-aware Learning from Heterogenous Traffic Data Sources: Exploring Cross-Modal Synergies

The Integrative Learning from Urban Data and Situational Context for City Mobility Optimization, or (ILU) project, is a Portuguese innovation effort that has just concluded. ILU joined national institutes, the Lisbon city council, and major public transport operators with the aim of revealing valuable knowledge hidden in heterogeneous traffic data sources. Grounded on Machine Learning advancements, a wide multiplicity of computational contributions has been devised in the context of the ILU project.

In this context, this project (ILU APP), designed a recommendation system able to integrate ILU project computational outcomes and subsequently deploy them at the stakeholders level. The research identified three major challenges: the adequate implementation of the analytical facilities proposed along the ILU project, ensuring their ready and seamless use by transport operators and municipalities; the coherent integration of these computational facilities, while further exploring their synergistic dependencies and taking into account the unique data access privileges per stakeholder; and finally, the complementary satisfaction of specific quality requirements – including interoperability, reliability, usability, efficiency, and extensibility – so that ILU APP can be securely configured on a server in the public partners. The project outcome of ILU APP will be a recommendation system able to explore cross-modality synergies from heterogeneous sources of traffic data in order to answer pivotal stakeholder needs, including the dynamic inference of multimodal origin-destination matrices, or the discovery of emerging mobility patterns to establish mobility reforms in response to the ongoing changes. A prototype version of ILU APP is already deployed and currently under use at CARRIS, the primary bus operator in the city of Lisbon, and at the Lisbon municipality.