

Dynamic and time-dependent trip planning

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Duration: 5-6 months

Company

Xerox Research Centre Europe was created in 1993 to conduct breakthrough research that would create innovative document technology and support Xerox developing service activities. Today, over half of Xerox's revenue comes from a broad range of services including managed print, healthcare, transportation, customer care, information technology and government.

Description

As both historical and real-time data are available for more and more urban areas, integrating either one or the other in trip planning algorithms has received a wide interest in the literature in the past few years [Bast et al. 2014]. Xerox Research Centre Europe (XRCE) has developed its own trip planner (<http://www.xrce.xerox.com/Research-Development/Industry-Expertise/Intelligent-Transport/Trip-Planning-Engine>), which integrates both dynamic and time-dependent data. The Trip Planner team of the Data Intelligence group is pursuing research to improve models and algorithms, take into account additional data and enhance user personalization and experience.

The aim of the internship is to join the Trip Planner team for working on time-dependent dynamic shortest path problems. Models and algorithms will be proposed and tested in the context of the current solution.

Requirements

As part of the 2nd year of your Master Degree, or final year of your Engineering School, you are looking for an internship lasting 5 or 6 months. Ideally, your diploma has a major in computer science and/or applied mathematics with some courses on operational research topics.

As prototypes are to be implemented, working knowledge of C++ is a plus and the candidate must be autonomous and motivated by optimization, innovation and research.

Bibliography

[Bast et al. 2014] Hannah Bast, Daniel Delling, Andrew V. Goldberg, Mathias Muller-Hannemann, Thomas Pajor, Peter Sanders, Dorothea Wagner, and Renato F. Werneck. Route planning in transportation networks. Technical Report MSR-TR-2014-4, Microsoft Research, January 2014.