

Postdoctoral Associate – User Experience Intelligent Transportation Systems (ITS) Lab – MIT

Project: Tripod: Sustainable Travel Incentives with Prediction, Optimization and Personalization

Job and Project Description

The ITS Lab has an opening for a Postdoctoral Associate in the context of the Tripod project. Tripod is an innovative app-based travel incentive tool that aims to influence travelers' trip making, mode, route, departure time choices and driving style toward system-wide optimal travel behavior and energy consumption. Tripod is designed to influence users' travel choices by offering them real-time information and rewards that can be redeemed for goods and services. The research team is developing a simulation-based tool as support for the personalized incentive decision making.

This opening is related to the development of the FMS-Advisor, which is the smartphone app for Tripod. FMS-Advisor is the enhancement of the Future Mobility Sensing (FMS) system which is a comprehensive platform to facilitate study of users' travel behaviors. We use GPS/GSM/Accelerometer/WiFi data collected by smartphones to facilitate more accurate data collection than traditional methods of household travel surveys. Our system consists of an smartphone app that collects sensor data from mobile devices; a backend server that processes the raw data to infer users' stops, activities, and modes of transportation; and a web application that allows users to verify and interact with their processed data in the form of a map and activity timeline. The position also involves data collection, data analysis and modelling of user preferences following the development of the platform.

More information on the ITS Lab and the Tripod project can be found at: <https://its.mit.edu/about-its-lab>.

Job Duties and Responsibilities

We are looking for a highly motivated and proactive postdoctoral associate that will undertake the following activities:

1. Work with the software development team in designing and developing the FMS-Advisor system.
2. Lead the development of innovative methods to collect mobility data in the context of FMS-Advisor
3. Perform analysis and visualization of big data. The types of data includes travel behaviour, response to the Tripod system, well-being/satisfaction, social interactions, phone/battery usage etc.
4. Coordinate data collection efforts.
5. Monitor the progress of the project and supervise students, regularly meet with PIs, and disseminate new findings in journals/conferences.

Requirements

- PhD in Transportation, Data Science or related disciplines
- Independent and self-motivated, yet able to work as part of a multidisciplinary team.
- Experience in big data, modeling, data analysis and visualization
- Experience in writing research publications
- Programming experience in at least one core scripting language is preferred.
- Practical experience in the development of client-server Android/iPhone applications and systems is preferred

- Familiarity with backend computing technologies, development and concepts (e.g. Serialisation, Webservices, Data Storage and Retrieval) is preferred
- Good analytical, communications, and interpersonal skills

To Apply

Interested candidates should send a CV, motivation letter and list of 3 references electronically to ben-akiva@mit.edu. Subject should read: **Postdoctoral Associate - User Experience.**

We regret that only shortlisted candidates will be notified.