Daynamica: Travel Survey App

Activity and Travel Tracking App

Daynamica is an innovative smartphone application that tracks and collects highly-detailed user activity and travel data. Using real-time data mining of raw sensor data with smartphone GPS and accelerometer data, the app automatically detects and classifies daily activity and travel. By allowing users to view and edit/customize the information, the software can collect more detailed data while it continuously improves its prediction algorithms. Furthermore, the app features a unique recursive self-improvement system whereby user input data continuously optimizes the data mining modules.

Collects Comprehensive Data

Daynamica was designed to replace or augment the periodic travel surveys federal, state and local agencies conduct to benefit the nation’s transportation and regional planning. Utilizing novel techniques for collecting data, automated sensing and real-time characterization and activity patterns, Daynamica enables officials to better assess program initiatives, review and recommend programs and policies, study current mobility issues and plan for the future. Daynamica’s accuracy reduces reporting errors that are common in standard travel diaries, producing better data for decision making.

This technology offers a wide variety of uses for the information it collects. Academic researchers can better understand human behavior and decision-making, and the general public can track their own travel and activity, whether as a travel diary or an exercise tracker. Most importantly, government agencies can collect comprehensive local, regional and national survey data on human activity and travel. Another way governments can use the more precise and more detailed Daynamica data is to replace or augment the...
American Time Use Survey sponsored by the Bureau of Labor Statistics, which provides nationally representative estimates of human activity patterns to inform economic and labor policy.

**Experience Sampling Alternative**

By employing real-time, accurate predictions of travel mode and activity type, Daynamica significantly eases the survey burden on users. The need for paper surveys, phone surveys or written diaries is eliminated, as users are no longer required to correctly and completely record or recall and accurately report their activity.

**BENEFITS AND FEATURES OF DAYNAMICA SMARTPHONE SOLUTION FOR TRACKING TRAVEL AND ACTIVITY:**

- Collects highly-detailed activity and travel data
- Recursive self-improvement system
- Helps researchers understand human behavior and decision-making
- Collects comprehensive survey data on local, regional and national activity and travel
- Helps individuals tracks daily travel and activity
- Provides valuable data to benefit national transportation infrastructure systems

**Phase of Development** - Beta Application

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