Integrating Explanations in a Navigation App

**Background**

The discussion about the need for software transparency is growing, motivated by the increasing number of software systems making part of our lives. Built-in explanations can help to build trust and influence the relationship of the user with the software. It can also facilitate its use and provide the user with a better understanding of the situation he/she is in and why he/she has obtained that output or result, favoring a better User Experience.

Explanations can help the user to understand why something happened, as well as what data was used in a decision, and how the system is processing and using the data. This provides more clarity about the system, allowing more data transparency and addressing privacy and other related concerns. It is, however, crucial to analyze the effect of those explanations and how they can be integrated within a system without compromising other quality aspects and without impacting negatively in the user experience.

**Task**

The first part of this work consists of developing an Android application. The App should include the indication of best routes and provide personalized recommendations according to the users’ data.

- **In the scope of a BA**, the personalized recommendations will not be based on ML, but in a simple backend mockup with personal information about the user.

- **In the scope of a MA**, the recommendations should be based on ML techniques. The best ML technique should be explored, as well as ways to provide explanations to the ML decisions.

Existing libraries can be used and details about the architecture and other functionalities can be discussed. The second part consists in investigating how to integrate explanations within the system and how they should be presented to the users without hindering usability or compromising the quality of the system. The explanations should be integrated and the final system will be evaluated in regard to different aspects (e.g., user satisfaction, usability, performance, etc.).

Includes:
- Limiting the points and the scope to be investigated in cooperation with the supervisor
- Defining and discussing the system architecture in cooperation with the supervisor
- Development of navigation application for Android
- Integration of explanation within the system
- Evaluation
- Interpretation and discussion of the results

This work can be written in English or German

**Organizational**

**Supervisor:** M.Sc. Larissa Chazette larissa.chazette@inf.uni-hannover.de, Raum G304

**Examiner:** Prof. Dr. Kurt Schneider

**Begin:** from now on possible

**Skills:** Good Programming Skills, Usability, UX