

[mobile applications]

search for parkspots in urban areas

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[introduction]

As a part of the course "Mobile Applications/Interdisciplinary Project" by Prof. Dr. Ansgar Gerlicher we developed a light-weight native mobile application in cooperation with students from the Hogeschool van Amsterdam and the Institute for Mobility and Digital Innovation.

[problem]

It is quite hard to find free parking spaces in urban areas like big cities as Stuttgart or Amsterdam. That often leads to illegal corner parking or at least expensive parking tickets.

[main objectives]

The aim is to develop a mobile application for smartphones which shows free parkspots in urban areas and suggests the navigation to it.

As the user is driving a car, we additionally implement a hands-free technology to navigate to the next free space with our application.

The user gets a map on the phone and push notifications when spots were taken.

[technologies]

App for Android and iOS:

React Native, NativeBase,
React Navigation, Redux

Integration:

Google Assistant with Dialogflow,
Google Maps, Apple Maps

Backend:

PostgreSQL, TypeORM, NestJS

Parkspot detection:

Raspberry Pi 3, PiPark, PIL, PiCamera

[solution]

Parkspot detection

- 🍷 define parking spaces with a user interface
- 🍷 observe parkspots on the Pi with a camera
 - 🍷 when the status of the spot changes, update our API



Mobile app

- ☒ display available parking spots nearby or search for a location
 - ☒ show latest searches and add favorites
 - ☒ navigation suggestion on the integrated map
 - ☒ integration of Google Maps and Apple Maps
 - ☒ get push notifications when spots were taken
 - ☒ filter spots by pricing, walking distance, disabled parking, electricity support, time

