



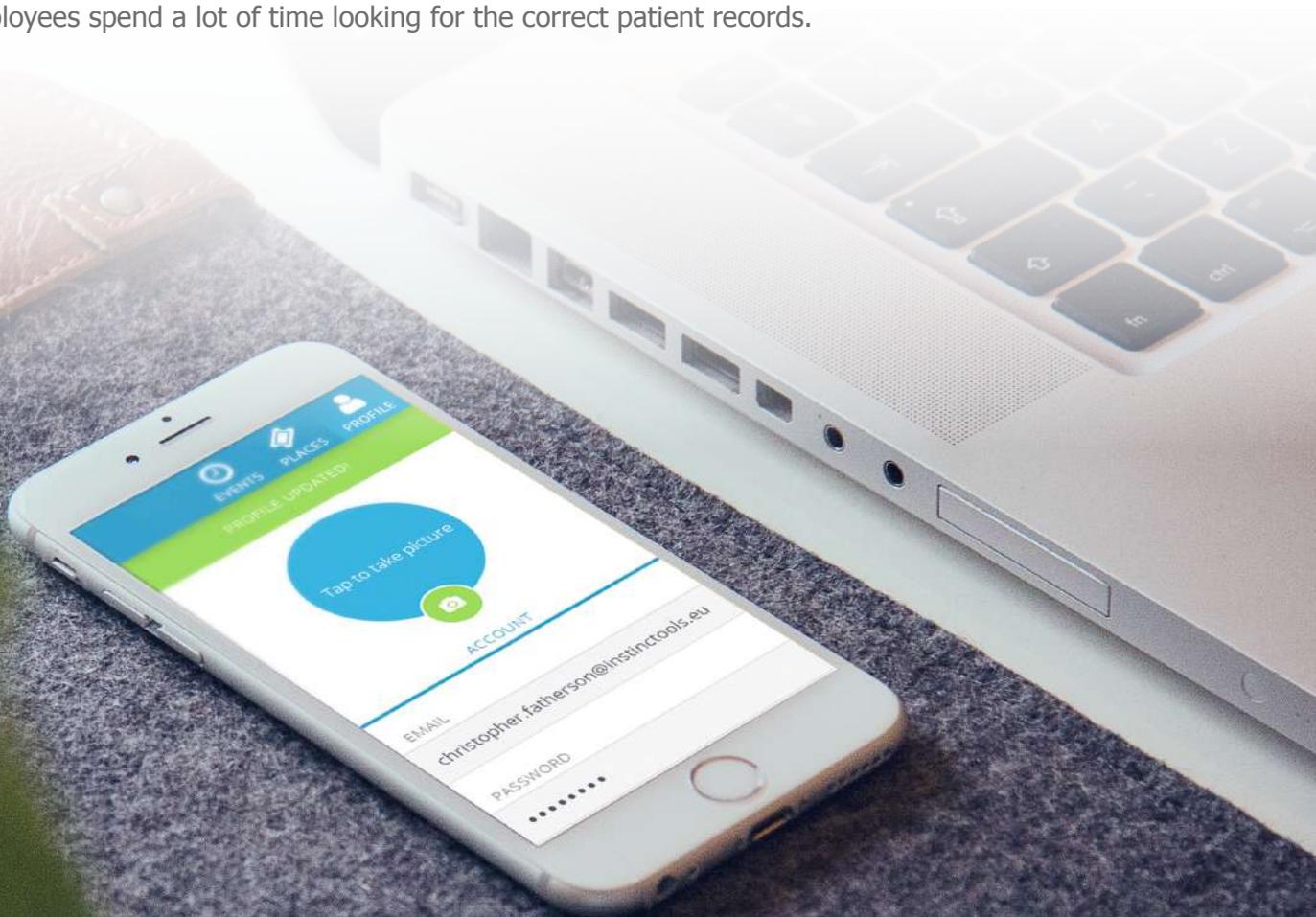
Patient Identification Software

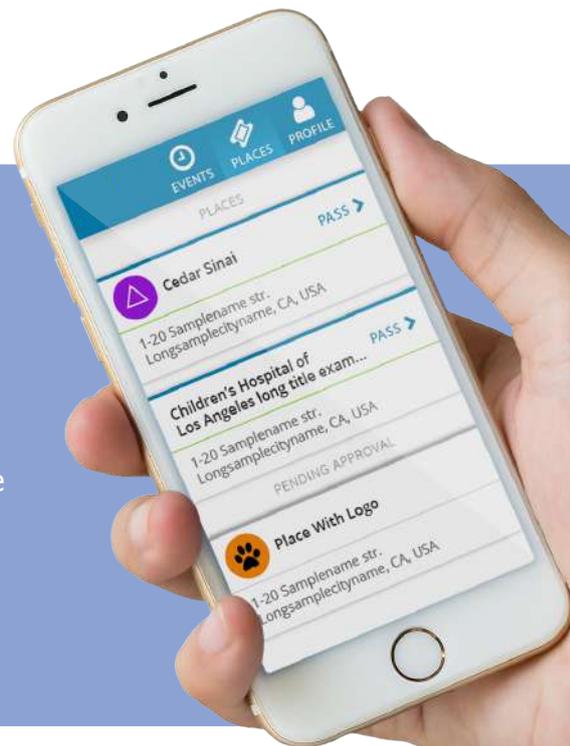
Our customer is an American healthcare data management company which helps healthcare organizations improve data quality and reduce errors. Their mission is to address the fundamental challenge of data management in healthcare: the uncertainties and missed opportunities caused by duplicate and disconnected records in a data population.

About the Project

The idea to develop the product for patient identification came to our customer because of the acute problem of personal identification in the field of healthcare.

The fact is that there occur different problems in the registry during identification of a person: inaccuracies, identification errors, and duplication of registration details. In such cases, employees spend a lot of time looking for the correct patient records.





There are more accurate ways of personal identification. These are biometric technologies, such as fingerprint scanners or vein scanners. However, such methods are poorly distributed because of their high cost.

The product for patient identification solves the problem of identification efficiently and relatively cheaply: with the help of face identification technology. This requires the use of cheap devices, such as smartphones and tablets.

Challenge

The customer tasked our company with the development of this patient identification software. The company required us to develop an application that could be further distributed to healthcare institutions (HI).

The structure of the application should be as follows:

1. Using the application, the patient registers for an appointment with the doctor.
2. After registration, a message with a QR code comes to his/her phone. This code is used to verify the patient's identity before the appointment.
3. When the patient comes to the HI, he/she needs to scan the QR code on the device provided by the HI for verification (for example, an info kiosk or tablet).
4. Then the patient needs to approach the camera and pass face recognition.
5. After such verification, the device shows the number of the room where the patient's appointment will take place, or an invitation to go to the registry.

Solution

We suggested developing a web and a mobile application.

We developed a **mobile application** (on iOS and Android platforms) for patients. It can be installed via a QR code. After installing the application, one has to enter his/her personal data and upload a photo. This application helps to make an appointment and receives notifications and QR codes for verification at the HI.

We have developed a **web-based face recognition app** for use in an HI. It is installed on the device the patient passes through during identification. The web application serves to read the QR code and recognize the patient's face. After verification is completed, the web application shows the patient what room to go to. If the QR code does not work, the application notifies the patient of the need to approach the registry.

Moreover, a part of our work was the development of a UX/UI design.



Key Features

The web-based face recognition app allows the user to:

-  shoot a photo via the device camera
-  enter confirmation information
-  read a verification pass QR code from a smartphone
-  use the app on a tablet.

The mobile app allows the user to:

-  sign up
-  enter a set of required demographic data, including a series of selfie images
-  edit content entered
-  keep information about appointments and other events
-  save pass QR codes for each event
-  integrate with a client's server. This is to establish an automatic match to the local records at the institution or to help an administrator perform a manual match to the local records. In the healthcare arena, this process would allow the image based registration system to communicate with local systems when the patient arrives at the facility.

Technologies Used

Web technologies:

- JavaScript, TypeScript
- Angular.js 2.0 + MVP/Wizard style
- Customized Tracking.js, Customized WebQR
- Ionic 2.0 (mobile prototype)
- Unit & E2E Testing: Angular TestBed, Jasmine, Protractor
- Custom Design, SCSS, CSS

Mobile technologies:

- Objective-C
- Java Development Kit (JDK) 7 and Android Studio

