Pattern recognition for the identification of medical devices

Identification engine for fast and secure identification of medical devices in hospital environment

General Info

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Project Abstract

Pattern recognition with the aim to identify particular medical devices just by scanning/ taking a picture of the type sign of the manufacturer. As regulations for these signs have changed throughout time a strategy shall be developed to handle all kind of different formats. Once read and identified, the information will be matched with database information from different sources

Background and Motivation

Auguris/ MDOP (Medical Device Operational Platform) is developing a smart assistant for doctors and nurses dealing with electromedical devices in hospital. Bringing them together with service providers, distributors and manufacturers we create a digital ecosystem that simplifies day to day life and simultaneously improves training level, quality and service processes.

Student's Tasks Description

In a first research at MRI (Rechts der Isar) the student will search for all kind of medical devices and document their different typesigns. These need to be matched with the existing administrational data (inventory, etc.) at MRI.

Once accomplished, entities of typesigns will be categorized (e.g. serial number, model number, manufacturer name, etc.) into different entities. Strategies are then developed to recognize the information given on the scans to entities. Some sort of quality control strategy needs to be implemented (plausibility check), therefore different data sources can be used (e.g. asset management data from MRI, EUDAMED platform, etc.).

Technical Prerequisites

Good programming skills and database knowledge are key for this project. Any prior experience in the field of pattern recognition will also contribute for fast success of the project, however, these skills can be acquired throughout the project with some extra effort. Excellent communicational skills in English are prerequisite to include different partners, German language skills are an optional benefit, but not mandatory.

References

First introduction to the topic can be found here:

https://www.fau.tv/course/id/1579

Similar task being solved here:

https://www.researchgate.net/publication/264873941_Automatic_license_plate_location_and_recognition