

MASTER THESIS

Development of a Responsive Web Application for Integration of a Prediction Model Used in a Clinical Decision Support System

CBmed, an Austrian funded competence center, links scientific experts with leading pharmaceutical, diagnostic, medical-technology and IT industry partners. CBmed has a strong European network in the area of biomarker research including Biobank Graz, the largest Biobank in Europe.

Overview

The aim of the project is to develop a clinical decision support system for critically ill patients based on existing and new biomarkers monitored by biosensors. Cooperation partners include the Medical University of Graz and B.Braun Melsungen AG, a medical device manufacturer. A first outline and visual concept of the clinical decision support system already exists.

Goals and Tasks

The main goal is to develop a graphical user interface based on international state-of-the-art recommendations and insights from health care professionals stationed at intensive care units of LKH-Univ. Klinikum Graz. As a second step, a mathematical prediction model developed at the Graz University of Technology Institute of Health Care Engineering will be integrated. Mobile up-to-date IT equipment is provided by CBmed.

Deliverables

- Implementation of a web application including data interfaces
- Integration of the mathematical model providing prediction of parameters based on user input
- Source code documentation
- General considerations regarding medical device classification
- Small-scale usability test

Starting latest by October 2017, the expected duration for completion is six months.

Prerequisites of the candidate

Programming skills in web development, especially HTML5, CSS, JavaScript/Typescript and AngularJS are required. Knowledge in MySQL, MATLAB and R is of advantage.

Benefits for the candidate

The candidate will gain experience and insight into clinical research at a K1 competence center. The ability to work at the interface of industry and science will provide a substantial background for the individual professional track. The candidate will be offered minor employment for the time of the thesis including a monthly salary of € 425,70 gross. Employment is currently limited to six months. Testimonial is provided after completion for personal proof of records.

Supervisors

Institute of Health Care Engineering with European Testing Center of Medical Devices
Univ.-Prof. Dipl.-Ing. Dr.techn. Christian Baumgartner
Dipl.-Ing. Katharina Bergmoser, BSc, MSc

Center for Biomarker Research in Medicine
Dipl.-Ing. Lucas Pflanzl, BSc, MA

Point of contact for application

Petra Majcen
phone: +43 385 28803
mail: petra.majcen@cbmed.at