Project Overview

<table>
<thead>
<tr>
<th>Project name</th>
<th>Programming of the User Interface to an open-source Fermenter</th>
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<tr>
<td>TUM Department</td>
<td>TUM School of Life Sciences</td>
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<tr>
<td>TUM Chair / Institute</td>
<td>Chair of Biopolymer Chemistry</td>
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<tr>
<td>Research area</td>
<td>Bioinformatics</td>
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<td>Student target group</td>
<td>Bioinformatics, Bioengineering or Bioprocess-Engineering</td>
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<tr>
<td>Project supervisor(s) – Name</td>
<td>Dr. Markus Guetlich</td>
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<td>Project supervisor(s) –</td>
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<td>Contact Details</td>
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Project Description

For a student practical lab course we have created an open-source fermenter with an electronic controller on the basis of a Raspberry-Pi. In the first step, we could finish construction of the hardware prototype and it's software, which is capable of controlling the heating, stirring, air-flow and measurement of the turbidity. In a second step, we are planning to add the controlling of the pH and of the oxygen-saturation.

Therefore, we are looking for a highly motivated and interdisciplinary oriented student with emphasis on the fields Bioinformatics, Bioengineering or Bioprocess-Engineering. Aim of the project is to create an appealing UI comparable to "craftbeerpi" (https://github.com/Manuel83/craftbeerpi). The Project will focus on programming a user friendly web interface for our open-source fermenter project based on Raspberry Pi and Arduino. Therefore, programming skills are required. If you feel familiar with the content of one or more of the following list, feel free to apply:
- Python
- Flask
- C++
- Raspberry Pi
- Arduino
- JavaScript
- SQL
- HTML
- Git

We are looking forward to receive your application.

Working hours per week planned (Mon-Fri, max. 40 hrs.) 40

Prerequisites

Level (at the time of arrival)  ☐ Undergraduate (3rd Year)  ☐ Senior Undergraduate (4th Year) or Graduate  ☒ Both

Prerequisites – Subject-related
Knowledge in Informatics and programming of embedded systems.
Basic knowledge in Fermentation.