INTERDISCIPLINARY PROJECT (IDP)

Expanding the Backend of a motion tracking application for sport and rehabilitation

Our vision
Our vision is to enhance the workout experience and the way you look into the mirror. We are developing an interactive smart mirror, which provides you with an unparalleled access to health and sports management. SOLOS is a compound system, which detects and analyses every single body movement in real-time. This way, it can give beginners as well as professionals the possibility to track and manage their workout effortlessly. Founded by TUM students, we participated in the TechFounders accelerator program and run pilot projects with industry partners. We are looking for highly motivated students and teams to support us as a part of an IDP project.

Goals
Our long-term goal is to improve our algorithms, so that we can offer a more fluid, proficient and enjoyable experience for our users. Customers should be given a live overview of their progress from the workout, their condition and additional suggestions. The difficulty is to build a robust architecture to cope with the large amount of received data from the different body stances. For this we are looking for highly motivated students to support us developing the system, which is able to calculate boundless amounts of data, and all that in a simple device.

Possible tasks
- Extend and adapt the API and endpoints
- Extend the user management database
- Extend the workout and exercises protocols and database
- Implement new protocols based on user requirements
- Extend the authentication layer
- Improve data security
- Document your approach

Approach
The project should occur as an agile software development based on Scrum, which we apply for managing product development iteratively. To reach our common goals, we challenge assumptions of the traditional, sequential approach of product development. We encourage daily face-to-face communication among all team members involved, in order to enable teams to self-organize and define flexible work strategies.

Requirements
- JavaScript
- Node.js, Mongodb
- JSON or XML
- Experience with UNIX Systems (a plus)
- Startup mindset (Flexibility and reliability)
- Team or Individual applications are possible
- Earliest starting date: 01.10.17

Theoretical Part
The lecture “Entrepreneurship” will provide the students with basic knowledge about startups and their environment, which represents the context of their IDP. More specifically, they will gain knowledge about the entrepreneurial process with detailed insights in venture creation and management, which is important to understand their project advisor’s daily business and its related challenges. The lecture will raise the students’ awareness on several important entrepreneurial aspects to consider and should thereby help them to adapt their project work to the entrepreneurial environment. In summary, the focus of the module is on important topics and key concepts in entrepreneurship, such as:
- Opportunity recognition and evaluation
- Challenges in the modern business environment for entrepreneurial managers
- Entrepreneurial decision making
- Resource allocation in new ventures
- Business planning
• New venture growth and internationalization
• Entrepreneurial motivation and psychology
• Entrepreneurial human and social capital

The lecture “Technology and Innovation Management: Introduction” provides the students with knowledge about market aspects of innovation and the organizing of the innovation process. This is important as the students will work on a novel solution themselves during their IDP. The lecture will raise the students’ awareness on several important aspects to consider and should thereby help them to professionalize the software development process. In summary, the focus of the lecture is on:

• Market aspects of innovation:
• Innovation: Examples and particularities
• Innovation and the development of industries
• Sources of innovation
• Innovation strategy: Analysis of the market, technology and competition
• Acquisition of technology: Market, cooperation and networks
• Organizing the innovation process:
• The innovation process within the firm
• R&D, production and marketing - cooperation for innovation?
• Motivation and incentive systems
• Promoters and champions - roles in the innovation process
• Opposition against innovation within the firm
• Integrating customers into the innovation process
• Measuring and controlling innovation

Application
By joining us, you can get a better look into the exciting world of the Munich Startup Scene. You'll have the chance to meet and connect with great entrepreneurs, mentors and enthusiasts. In case this has piqued your curiosity, please contact us and send your documents.
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