RESEARCH ASSISTANT POSITION

Pattern Recognition for Hand and Finger Kinematics

We offer a HiWi research assistant position to work on **feature engineering** and **data classification**. In some motor disorders, impaired hand kinematics can signalize the disease in early stages. Our project aims at detecting tiny differences in **natural finger movements**, which reflect important information for diagnosis. As the current diagnostic methods require an experienced and specialized physician, automated approaches could be more easily accessible and less subjective.

Our aim is to implement an automated diagnosis approach for specific motor diseases using machine learning techniques. A key step for successful machine learning is to extract informative features from the raw data - here **time series data** of **finger kinematics**.

The focus of your work is on the **extraction** of **significant features** from finger movement data, which we collected from younger and elderly subjects. You will start reviewing possible feature extraction methods, suitable for the type of data provided. Potential algorithms you will apply to the collected data in **Matlab**. Finally, you will apply appropriate machine learning algorithms using the generated feature space.

Please send your application to the e-mail address mentioned below **until 31.07.2021**.

Requirements:

- Course of study in a relevant field (Computer Science, Electrical / Medical Sys. Engineering)
- Very good programming skills (particularly in Matlab)
- Experience with machine learning (especially on dynamic data)
- Diligent way of working
- Interest in human movement kinematics

Contact:

M.Sc. Lisa Klemm
Department of Neurology
University Clinic Magdeburg
The Sensory Lab (Dr. Elena Azañón)
Brenneckestr. 6
39118 Magdeburg

Tel. +49-391-6263-9-233-1
E-mail: lisa.klemm@med.ovgu.de

Dr.-Ing. Christoph Reichert
Leibniz-Institut für Neurobiologie

AG Brain-Machine Interfaces (BMI)
Brenneckestr. 6
39118 Magdeburg

Tel. +49-391-6263-9-253-1
E-mail: christoph.reichert@lin-magdeburg.de

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