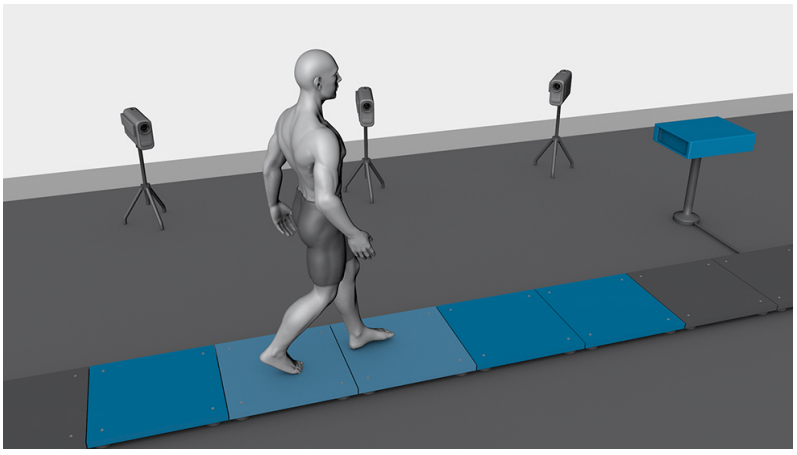
The Chair of Applied Dynamics at Friedrich-Alexander-University Erlangen-Nuremberg has an immediate offer for a

Project/Master's thesis

on

Person recognition using force data capture and multivariate data analysis

The goal of the master thesis is to develop algorithms for person recognition using force data capture sequences based on the fact that each person has a specific gait pattern motion, i.e. a characteristic force evolution can be measured during each gait phase (e.g. heel-strike, impact peak, mid-stance, active peak, and toe-off). The task is to implement several of the many existing statistical techniques for multivariable data analysis (e.g. principal components analysis (PCA) with classification algorithms (for instance kernel estimation (k-nearest neighbors algorithm k-NN)) or support vector machine (SVM), or partial least squares (PLS) regression method and to compare and analyse the results. The experimental set-up contains Bertec force plates (Velamed system) that record foot contact information from the human test subjects. This approach can be extended to include the optical motion capture and to recognize the sex/age of a person.



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Necessary qualification

- Technical studies (mechanical engineering, statistics ...)
- Experience in programming in Matlab

If you are interested, please contact Toufik Bentaleb via e-mail at toufik.bentaleb@fau.de.