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Project title (or topic):

Generating Daily Activities Using Generative Adversarial Networks

Short project description:

In Philips, we are developing health services that help individuals improve their health lifestyle, or help families take care of an elderly person or a chronically ill relative. In the development of these interactive services, we usually do not have enough (or any) data available to develop and test different features before the system goes into production. It is evident that generating agents with realistic daily schedules can facilitate the development and testing of such services.

Traditionally, human activities have been simulated using needs-based based models. Although these models can efficiently generate realistic looking schedules, they are simplified models of how humans go about their daily lives. Here, we propose the use of Generative Adversarial Networks (**GAN**) to generate realistic looking human activities using data from the Consolidated Human Activity Database (**CHAD**).

Technical assignment:

Create and train GANs for generating time series of daily human activities. These can be e.g. generated as weekly schedules. Different GAN architectures (RNN, Convolutional) and training methods (WGAN clip, gradient) will be used. Additionally, many of the schedules inside of the CHAD dataset have missing/unlabeled data points. The GAN should generate schedules without any unlabeled points.

Business assignment*:

*This part is only relevant for graduation projects carried out by students of the EIT ICT Labs (www.ictlabs.eu) variant of the Embedded Systems program. In addition to the MSc thesis about the technical aspects of their graduation project, these students need to write a short additional report discussing the business-related aspects of their graduation project. Please fill in this part if you wish your project proposal to be considered for this option.