DRT: Thesis SL-DRT-18-0646

RESEARCH FIELD

Computer science and software / Engineering science

TITLE

Deep Learning applied to multidimensional time series data

ABSTRACT

The DRT/LETI/DSYS/SSCE/LSSC laboratory is specialised in signal processing from different sensor types (accelerometer, magnetometer, gyroscope, GPS, Audio, Wi-Fi, Bluetooth, heart rate...) and is concerned with classification problems such as automatic recognition of transportation mode from embedded smartphone sensors, stress assessment from dedicated physiological sensors or sport gesture recognition from a connected watch.

These problems have already been the subject of many research based on traditional classification approaches, i.e. manually constructing the features used for classification from the available signals.

The aim of this thesis is to study if deep learning, a machine learning technique that recently showed outstanding results in image recognition, is suited to classification problems with multidimensional time series data.

This thesis will benefit from the expertise of LIRIS laboratory in the fields of machine learning and deep learning.

LOCATION

Département Systèmes
Service Systèmes de Capteurs, électroniques pour l'Energie
Laboratoire Signaux et Systèmes de Capteurs
Place: Grenoble
Start date of the thesis: 01/10/2018

CONTACT PERSON

Andrea VASSILEV
CEA
DRT/DSYS/SSCE/LSSC
MINATEC
CEA/LETI/DCIS/SMOC
CEA-Grenoble
17 - rue des Martyrs - 38054 Grenoble Cedex 9
Phone number: +33 4 38 78 51 10
Email: andrea.vassilev@cea.fr
UNIVERSITY / GRADUATE SCHOOL
Grenoble INP
Electronique, Electrotechnique, Automatique, Traitement du Signal (EEATS)

THESIS SUPERVISOR
Liming CHEN
Liris laboratory
UMR CNRS 5205
Liris laboratory UMR CNRS 5205
Ecole Centrale de Lyon
36 avenue Guy de Collongue
69134 Ecully Cedex
France