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DRT: Thesis SL-DRT-18-0646

## RESEARCH FIELD

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Computer science and software / Engineering science

## TITLE

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Deep Learning applied to multidimensional time series data

## ABSTRACT

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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

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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

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## UNIVERSITY / GRADUATE SCHOOL

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Grenoble INP

Electronique, Electrotechnique, Automatique, Traitement du Signal (EEATS)

## THESIS SUPERVISOR

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