**PhD position in Few-shot learning: Application to object detection and semantic instance segmentation, CEA Tech Department of Computer Science and Software, France.**

**JOB DETAILS**
**Title:** PhD position - Few-shot learning: Application to object detection and semantic instance segmentation
**Employer:** CEA Tech
**Job location:** 17 rue des martyrs, F-38054 Grenoble
**Published:** July 27, 2019
**Application deadline:** October 31, 2019
**Job types:** PhD
**Fields:** Informatics, Information Science, Algorithms, Statistics, Artificial Intelligence, Artificial Neural Network, Computer and Society, Computer Architecture, Computer Communications (Networks) and 26 more.

**JOB DESCRIPTION**
SL-DRT-19-1084
**RESEARCH FIELD**
Computer science and software

**ABSTRACT**
Nowadays, many computer vision tasks are successfully managed by deep learning models. Those include, for example, object detection and recognition, image classification, person, gesture, action or activity recognition... which are useful in many fields of application (video-surveillance, autonomous driving, robotics, industry 4.0, medical image analysis, active assisted living, etc.). The drawback of these deep neural networks-based approaches is that they require a huge amount of annotated data during their supervised training. On the one hand, manual data annotation is a tedious and expensive task. On the other hand, data can also be rare or difficult to gather for some reasons, including privacy, safety, or ethics. It is therefore essential to design methods that learn from very few annotated samples of data. The challenge of few-shot learning is then to approach, even surpass, human ability to learn and generalize from few examples. The objective of this thesis is to propose novel methods that optimize the model ability to rapidly handle new tasks, including detecting, segmenting and recognizing new object classes. A comparative study between state-of-the-art and developed methods will be carried out on many datasets in order to quantify performance improvements, dependence on number 0of samples, as well as generalization ability relative to types of data.

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START DATE
Start date on 01-10-2019
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**« The age limit is 26 years for PhD offers and 30 years old for post-doc offers. »**