Maxime BUCHER | Curriculum Vitae

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I am a research scientist of valeo.ai, a academic research lab focused on self-driving cars. My research interest is **machine learning - deep learning**, specifically the intersection of **natural language processing** and **computer vision** (zero-shot and few-shots learning, visual question answering, semantic retrieval, visual dialog...).

Employment

- **VALEO.AI** **October 2018–Present**
  Deep Learning Research Scientist
  Academic research focused on self-driving car (semantic segmentation, object detection, few-shots learning...).

- **ONERA: The French Aerospace Lab** **October 2015–September 2018**
  Deep Learning PhD student, supervisors: Dr.Stéphane Herbin and Pr.Frédéric Jurie
  Combine vision and language for weakly supervised learning, zero-shot learning, image retrieval and visual reasoning.

- **ENSTA-ParisTech U2IS** **March 2015–August 2015**
  Robotics Research Trainee, supervisors: Dr.Mathieu Lefort and Pr.Alexander Gepperth
  Incremental learning of regularities in a multimodal data flow applied to developmental robotics.

Education

- **GREYC-CNRS** **October 2015–September 2018**
  Deep Learning PhD student, supervisors: Dr.Stéphane Herbin and Pr.Frédéric Jurie
  Title: Learning and exploitation of semantic representations for image classification and retrieval

- **Paris-Sud university** **August 2015**
  Computer Science Research Master, Artificial Intelligence

Skills

- **Operating system:** Unix systems
- **Programming:** Python, SQL
- **Python package:** Numpy, Pandas, Matplotlib, Tensorflow, PyTorch, Scikit-Learn
- **Language:** French (Native), English (Full professional proficiency)

Publications

- ADVENT: Adversarial Entropy Minimization for Domain Adaptation in Semantic Segmentation. In Computer Vision and Pattern Recognition **(CVPR)**, 2019.
- Semantic bottleneck for computer vision tasks. In Asian Conference on Computer Vision **(ACCV)**, 2018.
- Zero-Shot Classification by Generating Artificial Visual Features. In **RFIAP**, 2018.
- Generating Visual Representations for Zero-Shot Classification. In International Conference on Computer Vision **(ICCV)** Workshops, 2017. **(best paper award)**
- Improving Semantic Embedding Consistency by Metric Learning for Zero-Shot Classification. In European Conference on Computer Vision **(ECCV)**, 2016.
- Hard Negative Mining for Metric Learning Based Zero-Shot Classification. In European Conference on Computer Vision **(ECCV)** Workshops, 2016.