# Timothée Lesort

Curriculum Vitae



# Highlights

- **Key words** Deep Learning, Continual Learning, Generative Models, State Representation Learning, Robotics Learning
  - Website https://tlesort.github.io/
  - Scholar Timothée LESORT
- Language: French (mother tongue), English, German (B2 certification)

### Education

- 2017-2020 PhD, "Continual Learning: Tackling Catastrophic Forgetting in Deep Neural Networks with Replay Processes", Computer Science, Data Analysis and Artificial Intelligence at IP Paris, U2IS Laboratory, Ensta-Paris and Theresis Laboratory, Thales (Palaiseau, France).
- 2015–2016 **Exchange Student at University of Montreal**, *DIRO Department (department of Computer Science and Operational Research)*, Machine Learning specialization with MILA laboratory (master level).
- 2012–2015 **Engineering Graduate School**, *CPE LYON*, ETI section (Electronics, Telecommunications and computer science) - Robotics specialization.
- 2010–2012 Preparatory class (2 years full-time higher education in Mathematics and Physics), CPE LYON.
- 2007–2010 High School, Lycée Édouard-Herriot (Misérieux), science section.

#### Work Experience

2016-2017 Research Engineer, THALES, Palaiseau.
 Deep Learning for Robotics - Theresis Laboratory (6 months fixed term contract)
 o Development of embedded deep learning algorithms for objects detection and classification.

2016 Master Thesis internship, ENSTA PARIS, Palaiseau.

*Deep Learning for robotics* - robotics and computer vision laboratory of Ensta-Paris • Development of deep learning algorithms : classification, state representation learning

 Participation in the DREAM European-Union project on robotics http://www.robotsthatdream.eu/

# 2014–2015 Full-year internship (Graduate level), AUTOMOTIVE DEPARTMENT, INFINEON, Munich.

Software Developer for testing programs on microcontrollers.

- $\circ~$  Maintenance and development of testing programs with VB.NET
- Development of automation programs and tests

# Computer Science tools

- PYTORCH Reproduction of scientific results on Generative Models, Continual Learning and development of new approaches
  - $_{\rm VB.NET}~$  Development of a testing platform on micro-controller for continuous integration.
  - $\label{eq:C} C/C++ \ \ \, \mbox{Development on Embedded Deep Learning on Tegra $\times$1 platform with caffe creation} \\ of a chess game 3D design with Opengl$
  - MATLAB Analysis and mathematical calculations about signals and images control of a robotic arm (SIMULINK)
    - Others Git, Linux, BASH, Matplolib, Pack Office

# Professional Activities

## Activity in the continual learning field

- Co-founding member of the "ContinualAI" comunity (https://www.continualai. org/), A community to promote and gather together the continual learning researchers and engineers.

### **Invited Talks**

- "Continual Deep Learning with Generative Replay" Thales Research and Technology, Palaiseau, Octobre 2019
- "Generative Models from the Perspective of Continual Learning" MILA Montréal, Décembre 2018

#### Reviewer

- Workshop on Continual Learning in Computer Vision (CVPR 2020)
- International Conference on Robotics and Automation (ICRA 2020)
- IEEE Transactions on Automation Science and Engineering (T-ASE)
- IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS 2019)
- IEEE-RAS International Conference on Humanoid Robots 2018
- IEEE International Conference on Developmental and Learning and Epigenetic Robotics (ICDL-EpiRob 2018)
- IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS 2017)
  Teaching
- Teacher assistant: Ensta-Paris IN103 "Advanced Algorithmic and C programming"

### **Co-Advising**

Masters research

- Mathieu Seurin (Currently Phd student at CRIStAL/Inria Lab - France)

- René Traoré (Currently Phd student at German Aerospace Center Germany)
- Ashley Hill (Currently Phd student at Atomic Energy Commission (CEA) France)
- Te Sun
- Lu Lin
- Guanghang Cai
- Gaspard Qin
- Xinrui Li

# Publications

- 2020 Continual learning for robotics: Definition, framework, learning strategies, opportunities and challenges, *T Lesort, V Lomonaco, A Stoian, D Maltoni, D Filliat, N Diaz-Rodriguez,* , 2020, 58, pp.52-69. doi : 10.1016/j.inffus.2019.12.004.
- 2019 **DisCoRL: Continual Reinforcement Learning via Policy Distillation**, *R Traoré\**, *H Caselles-Dupré\**, *T Lesort\**, *T Sun*, *G Cai*, *N Diaz-Rodriguez*, *D Filliat*, Deep RL Workshop, NIPS 2019, Vancouver.
- 2019 Exploring to learn visual saliency: The RL-IAC approach, *C Craye, T Lesort, David Filliat, J-F Goudou*, Robotics and Autonomous System, Elsevier, 2019, 112, pp.244-259. doi: 10.1016/j.robot.2018.11.012.
- 2019 Marginal Replay vs Conditional Replay for Continual Learning, T Lesort, A Gepperth, A Stoian, D Filliat, Artificial Neural Networks and Machine Learning – ICANN 2019: Deep Learning, Springer International Publishing, pp.466-480.
- 2019 Training Discriminative Models to Evaluate Generative Ones, T Lesort, A Stoian, J-F Goudou, D Filliat, ICANN, Munich.
- 2019 Unsupervised state representation learning with robotic priors: a robustness benchmark, T Lesort, M Seurin, X Li, N Diaz-Rodriguez, D Filliat, IJCNN, Budapest.
- 2019 Generative Models from the perspective of Continual Learning, T Lesort, H Caselles-Dupré, M. Garcia-Ortiz, J-F Goudou, D Filliat, IJCNN, Budapest.
- 2018 State representation learning for control: An overview, T Lesort, N Diaz-Rodriguez, J-F Goudou, D Filliat, Neural Networks, Elsevier, 2018, 108, pp.379-392. doi: 10.1016/j.neunet.2018.07.006.
- 2018 Decoupling feature extraction from policy learning: assessing benefits of state representation learning in goal based robotics, A Raffin, A Hill, R Traoré, T Lesort, N Diaz-Rodriguez, D Filliat, SPiRL Workshop ICLR, New Orleans.
- 2018 S-RL Toolbox: Environments, Datasets and Evaluation Metrics for State Representation Learning, A Raffin, A Hill, R Traoré, T Lesort, N Diaz-Rodriguezz, D Filliat, Deep RL Workshop NIPS, Montréal.
  - Hobbies

- Music

- Sport (Volleyball-Tennis)

- Computer Science