

# Astrid Merckling

## Doctor in Machine Learning and Robotics

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## Work Experience

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- Dec 2017-Sept 2021, **Sorbonne Université**, Research  
3 years, 10 months  
Paris  
*PhD Candidate in the Research Laboratory ISIR – UMR 7222 CNRS*  
- Advisors: Pr. Stéphane Doncieux, Dr. Nicolas Perrin-Gilbert and Dr. Alexandre Coninx  
- Subject: Unsupervised Pretraining of State Representations in a Rewardless Environment  
- Main contributions: two new state-of-the-art algorithms for state representation learning (SRL)
- Mar-Jul 2017,  
5 months,  
Paris  
**Université Paris Descartes**, Research  
*Intern in the Research Laboratory MAP5 – UMR 8145 CNRS*  
- Implementation of neural networks in Python (TensorFlow) for classification and super-resolution on images  
- Conception of a new convolutional neural network adapted to subsampling  
- State-of-the-art results of the proposed InterpSRN neural network to “zoom a subsampled image by a factor of two”
- Jun-Aug 2016,  
3 months,  
Paris  
**BioAxial**, Nanotechnologies  
*Intern in Research and Development*  
Design of optimization algorithms for microscope calibration in Matlab
- Jun-Jul 2015,  
2 months,  
Montrouge  
**Crédit Agricole**, Bank  
*Intern in Financial Management at the headquarters*  
Conception of an algorithm for the deposit quality score with VBA Excel Macros
- Jul 2014,  
1 month,  
Paris  
**SMACL**, Insurance  
*Summer Work in Jurist Department*  
- Identification of closed/incomplete/open files  
- Check of the legal state of progress of the contentious files  
- Relaunching with the insured and the lawyers

## Education

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2017-2021,  
3 years, 10 months      **ISIR – Sorbonne Université**  
*PhD in Computer Science – Publicly defended on September 22, 2021*  
Machine Learning, Robotics, Unsupervised Learning, Exploration,  
Reinforcement Learning

2014-2017,  
3 years,  
Paris      **Université Paris Descartes**  
*Master 2 in Applied Mathematics*  
Mathematics, Image Processing

## Skills

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Languages:      French (native), English (advanced)  
Software:      Python (pandas, Scikit-learn, PyTorch, TensorFlow), Matlab,  
C/C++ (OpenCV), dynamic robotic simulation (MuJoCo and PyBullet)  
Computer science:      Machine Learning (Deep Learning techniques, Reinforcement Learning  
algorithms), Computer Vision

## Leisures

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Arts:      Playing the piano, painting  
Sports:      Hiking