

Guillaume Bellec

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PhD student in Deep Learning and Computational Neuroscience

Academic career :

Since 2015	PhD student and university assistant at the institute for Theoretical Computer Science of TU-Graz under supervision of Wolfgang Maass : <ul style="list-style-type: none">- investigation of models of learning and working memory in the brain and deep learning,- teaching Machine Learning and Reinforcement based learning
2014	Master thesis in Computational Neuroscience with R. Brette and P. Yger at the Vision institute, Paris
2012-2013	One year research internship in Sound and music computing with Anders Friberg at KTH, Stockholm
2012	Research internship in Machine Learning with Tillmann Weyde at the City University, London

Education :

2013-2014	Master of Mathematics, Vision and Learning at ENS Cachan , Paris
2010-2014	Master of Optimization and Operational Research at ENSTA ParisTech , Paris
2012-2013	Erasmus program at KTH in audio techonology, Stockholm
2008-2010	Classes préparatoires aux grandes écoles, Paris

Scientific achievements and skills :

2019	Reviewer at the NeurIPS conference Reviewer at the IEEE signal processing magazine Committee member at the 3rd Human Brain Project student conference on interdisciplinary brain research
2018	Summer school at the Marine Biological Laboratory in Woods hole about Brains, Minds and Machines Summer school at the Princeton Neuroscience Institute about Cellular, Comp. and Cogn. Neuroscience
-	Expert knowledge of TensorFlow and python Programming of deep and biological neural networks models on GPU and neuromorphic hardware Experience in the analysis of neural data (calcium imaging, electro-physiology)

First author publications :

arxiv 2019	<i>Bellec*, Scherr*, Hajek, Salaj, Legenstein and Maass.</i> Biologically inspired alternatives to backpropagation through time for learning in recurrent neural nets
NeurIPS 2018	<i>Bellec*, Salaj*, Subramoney*, Legenstein and Maass.</i> Long short-term memory and learning-to-learn in networks of spiking neurons (NeurIPS / NIPS 2018 , Conference on Neural Information Processing Systems)
Frontiers 2018	<i>Liu*, Bellec* . . . Furber, Maass, Legenstein and Mayr.</i> Memory-Efficient Deep Learning on a SpiNNaker 2 Prototype (Frontiers in Neuroscience Neuromorphic Engineering 2018)
ICLR 2018	<i>Bellec, Kappel, Maass and Legenstein.</i> Deep Rewiring: Training very sparse deep networks (ICLR 2018 , International Conference on Learning Representations)
JCNS 2016	<i>Bellec, Galtier, Brette and Yger.</i> Slow Feature Analysis with spiking neurons and its application to audio stimuli (Journal of Computational Neuroscience)
SMC 2013	<i>Bellec, Friberg, Elowsson, Wolff, Weyde.</i> A social network integrated game experiment to relate tapping to speed perception and explore rhythm reproduction (International Sound & Music Computing Conference)

Other publications :

IJCNN 2017	<i>Schmitt, Bellec, . . . Legenstein, Maass, Mayr, Schueffny, Schemmel, Meier.</i> Neuromorphic hardware in the loop: Training a deep spiking network on the brainscales wafer-scale system (International Joint Conference on Neural Networks)
ISCAS 2017	<i>Petrovici, Bellec, . . . Maass, Schueffny, Mayr, Schemmel, Meier.</i> Pattern representation and recognition with accelerated analog neuromorphic systems (International Symposium on Circuits and Systems)
AES 2013	<i>Wolff, Bellec, Friberg, MacFarlane, Weyde.</i> Creating Audio Based Experiments as Social Web Games with the CASimIR Framework (International Conference of the Audio Engineering Society)