



IMSE-CNM



## What has Deep Learning ever done for us? The Convis toolbox for modelling visual responses from retina to cortex built on PyTorch

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Deep convolutional neural nets are a hot topic in machine learning. Their success stems in part from the computational frameworks that were developed for their specific use case, such as Theano, Torch and Tensorflow.

I will give an introduction on how the main features of these frameworks, such as GPU accelerated operations and automated differentiation, can be used for non-deep-learning tasks, such as implementing LN-cascade vision models or fitting parameters in a model for Retinal Ganglion Cells.

JACOB HUTH studied Cognitive Science in Osnabrueck with a specialization in Neuroinformatics and received his Masters degree there in 2014. Since 2015 he has been working as a PhD student in Angelo Arleo's lab at the Institute of Vision in Paris to investigate perceptual decline in old age and how it can be explained by neural mechanisms. He developed Convis, a vision model toolbox based on convolution and automated differentiation, written in Python.

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Introducción  
Cómo llegar  
Organización  
Personal  
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Informática  
Herramientas CAD

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Proyectos  
Catálogo de ICs  
Patentes

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