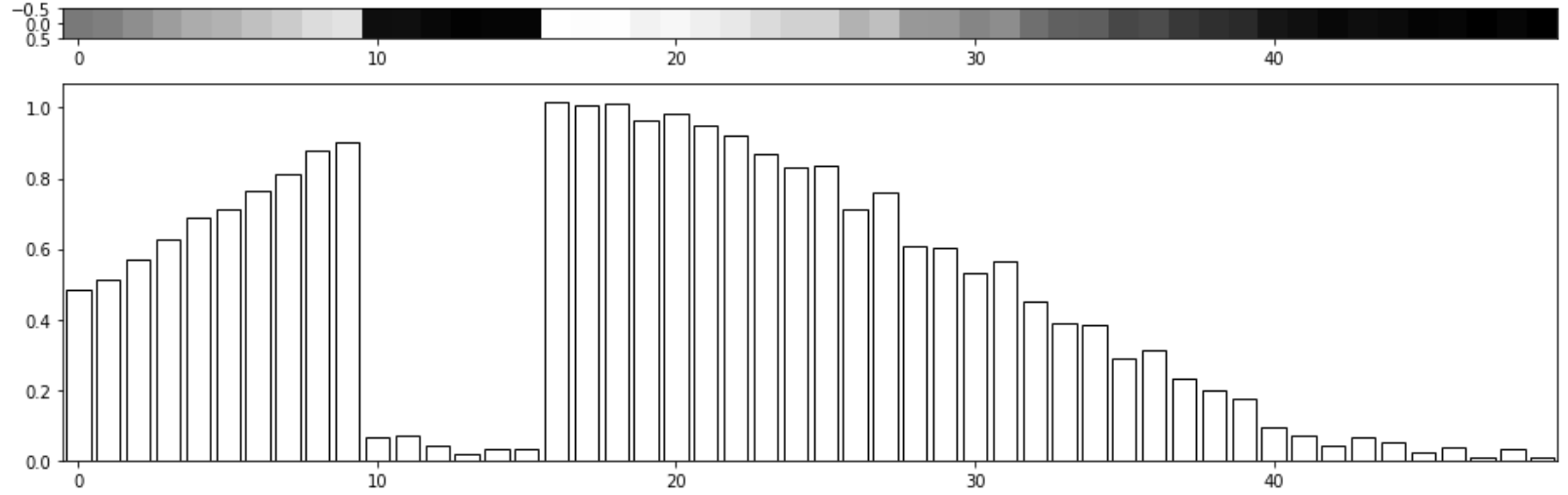


# INTRODUCTION AUX RÉSEAUX DE NEURONES

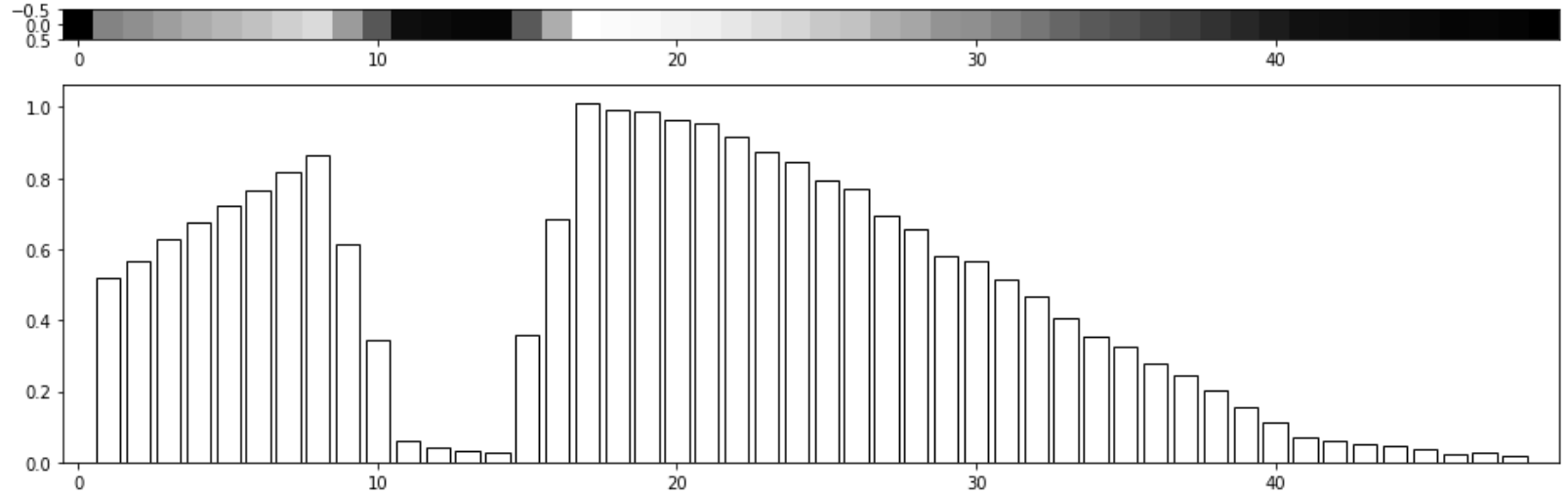
Réseaux de neurones convolutifs **[bis]**  
(«CNN» : *Convolutional neural networks*)  
Quelques illustrations en une dimension

Pascal Germain, 2018

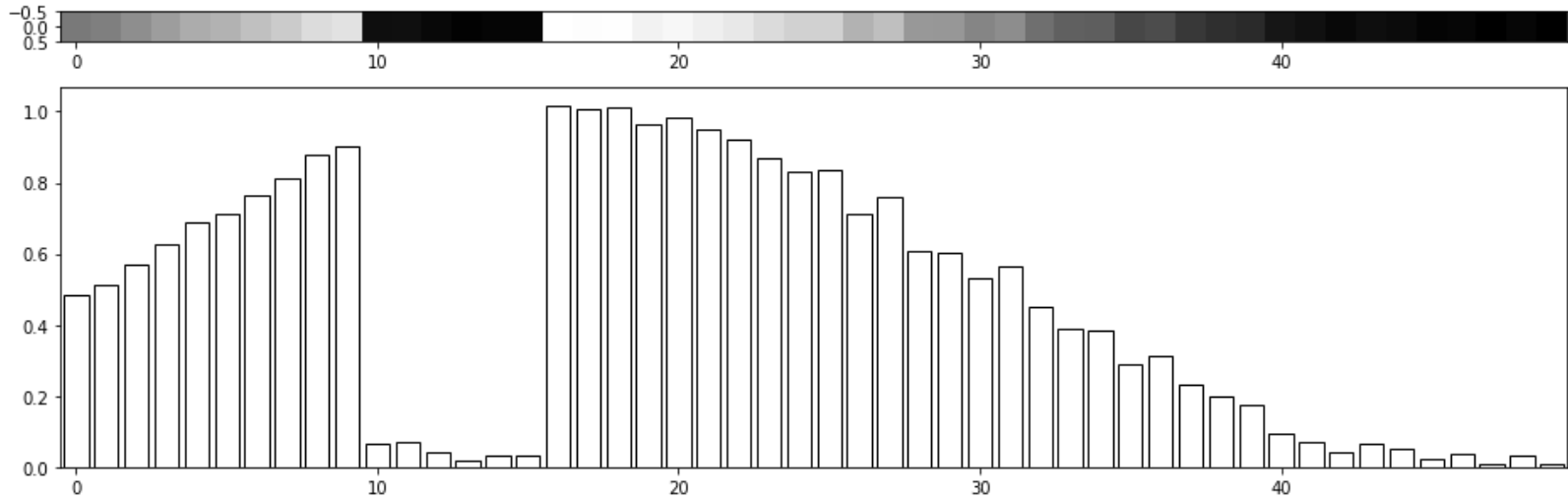
$x$



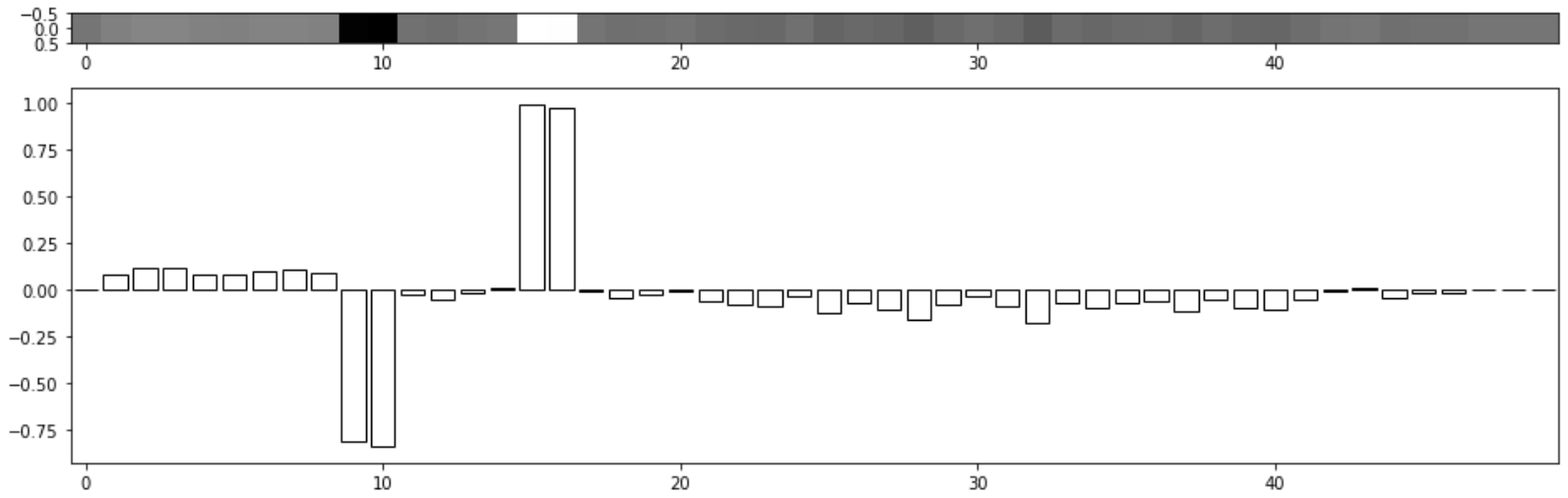
Filtre :  
[ 1/3, 1/3, 1/3 ]



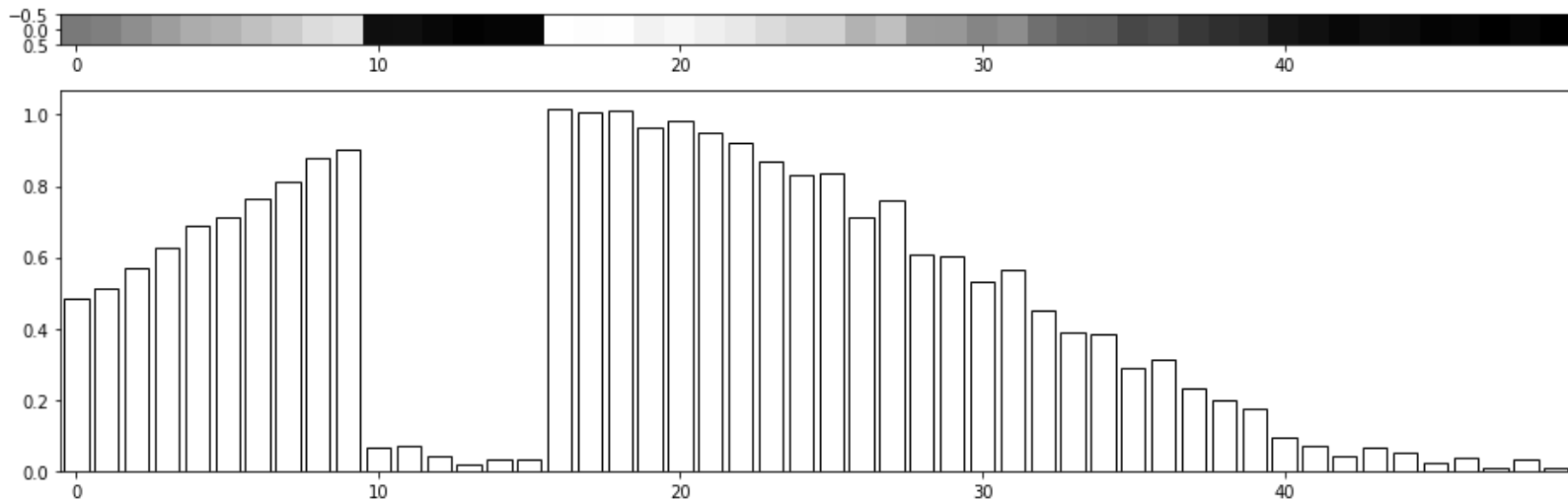
$x$



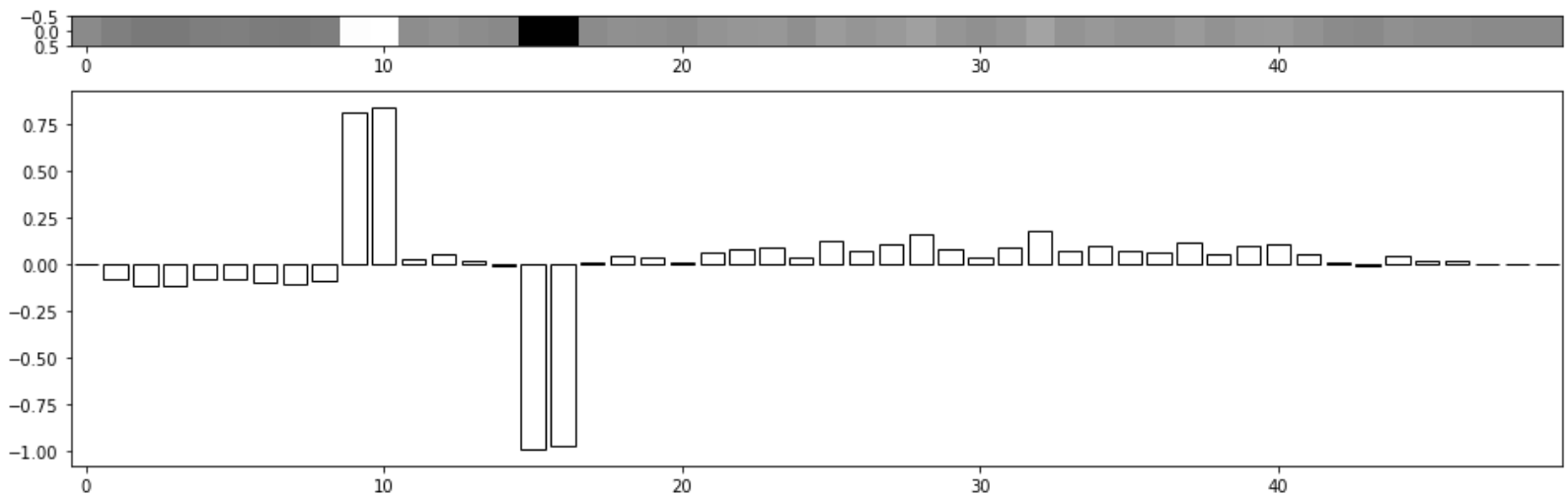
Filtre :  
[ -1, 0, 1 ]



$x$

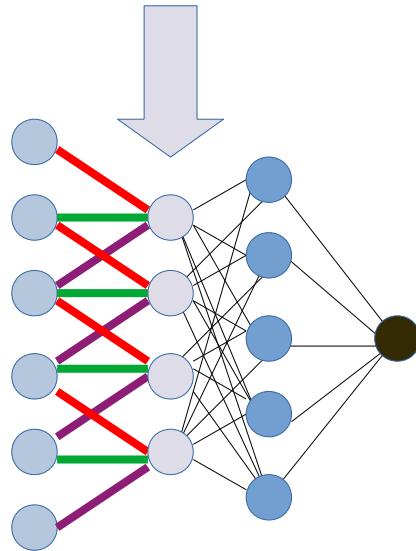


Filtre :  
[ 1, 0, -1 ]



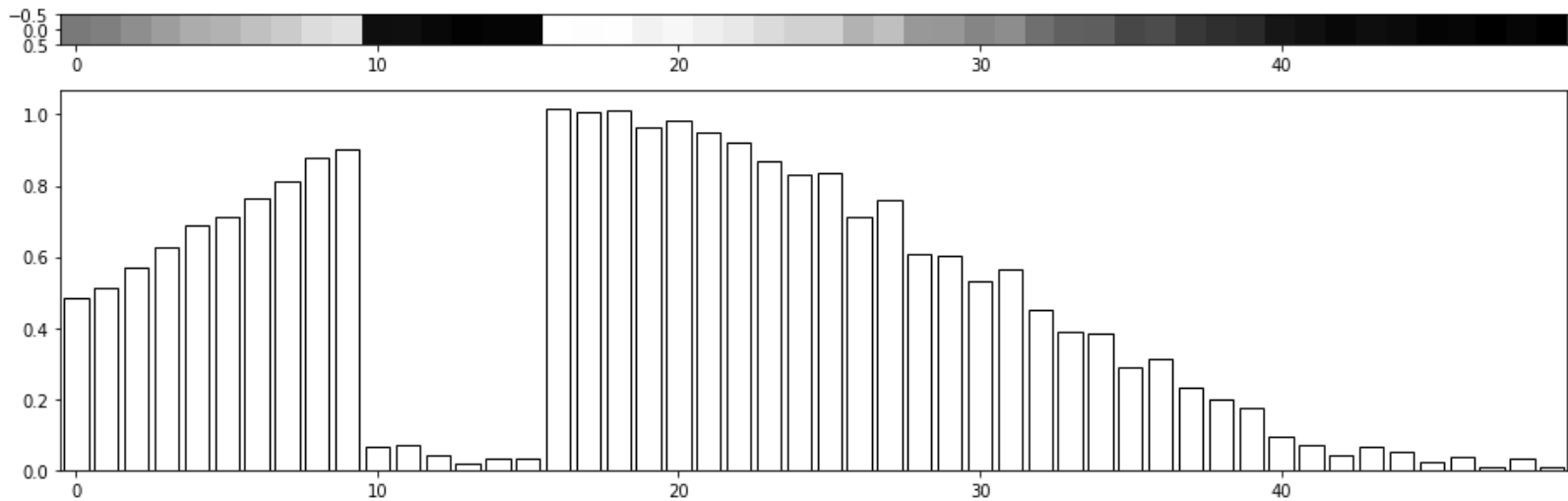
Couche  
de convolution

Filtre : [  $w_1$ ,  $w_2$ ,  $w_3$  ]



Couche  
pleinement  
connectée

$x$



ReLU



# Couche de convolution

Filtre 1 : [  $w_{11}$ ,  $w_{12}$ ,  $w_{13}$  ]

Filtre 2 : [  $w_{12}$ ,  $w_{22}$ ,  $w_{23}$  ]

