BioGen and baba.vision

Deep dive into research, tech and possible collaborations

Esten H. Leonardsen

Chief Scientific Officer, baba.vision

Post-doc at the Department of Psychology, Universitet i Oslo

baba.vision

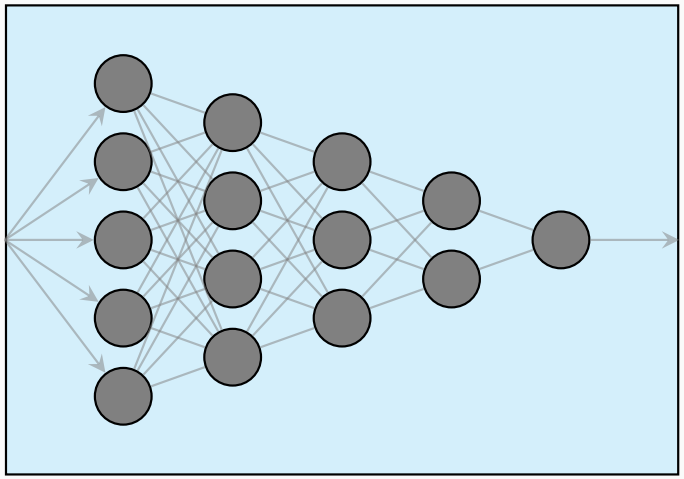
Content

- Scientific background
  - Brain age predictions using deep learning
  - Explainable artificial intelligence and dementia
- Baba.vision tech
- Feasibility study

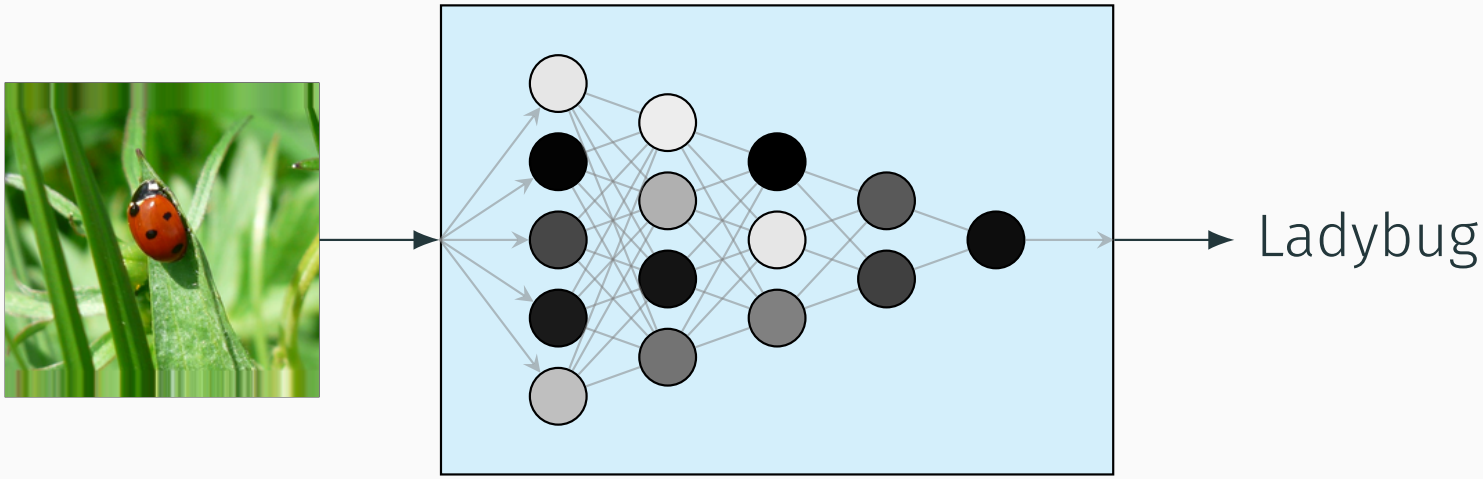
Explainable AI and dementia

Theoretical background

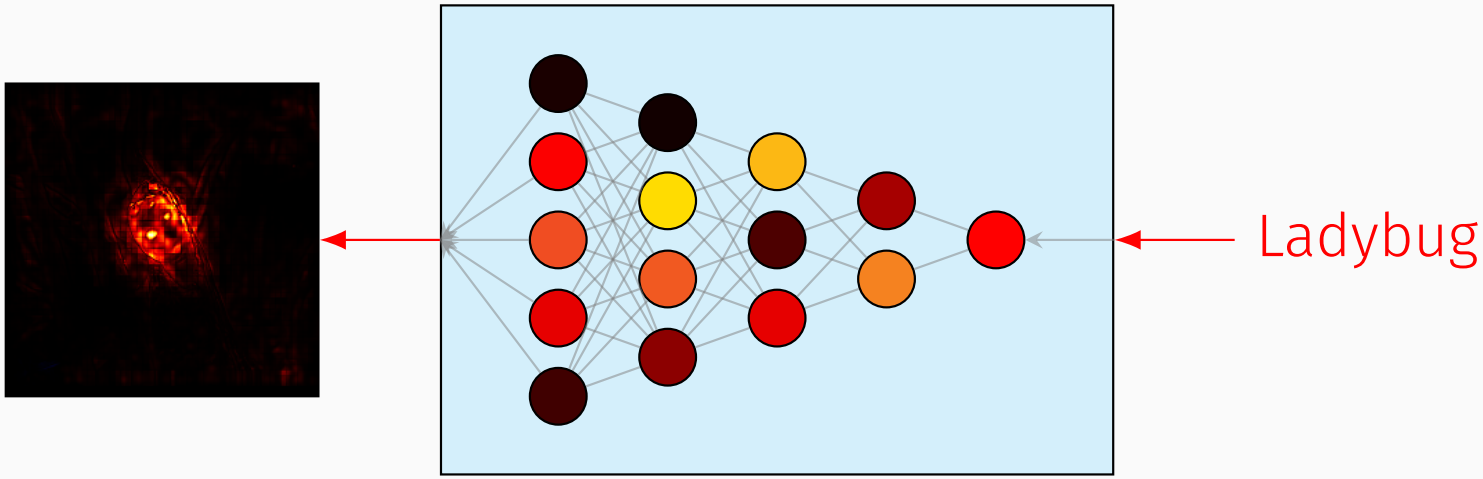
Artificial neural network



Theoretical background

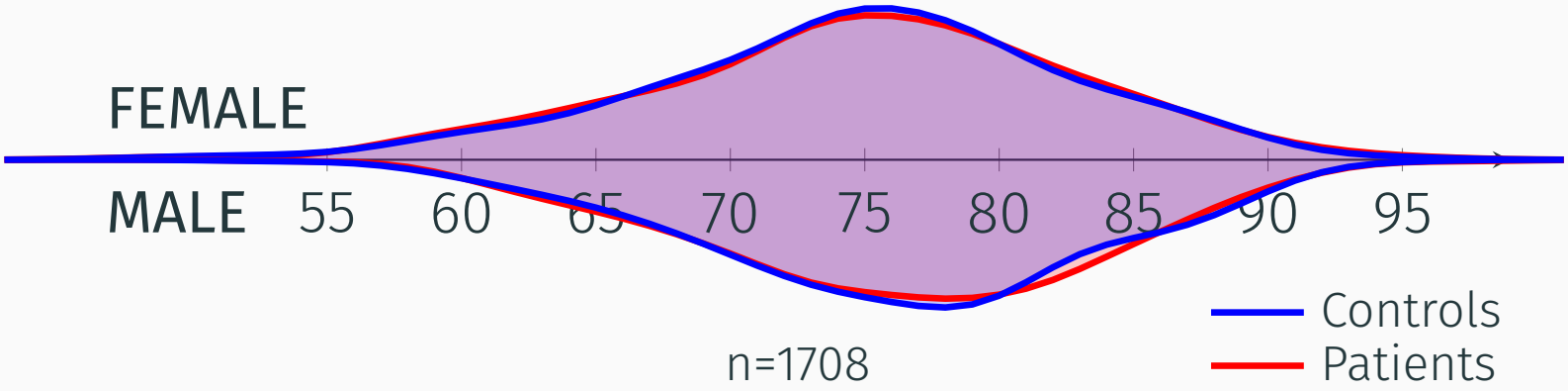


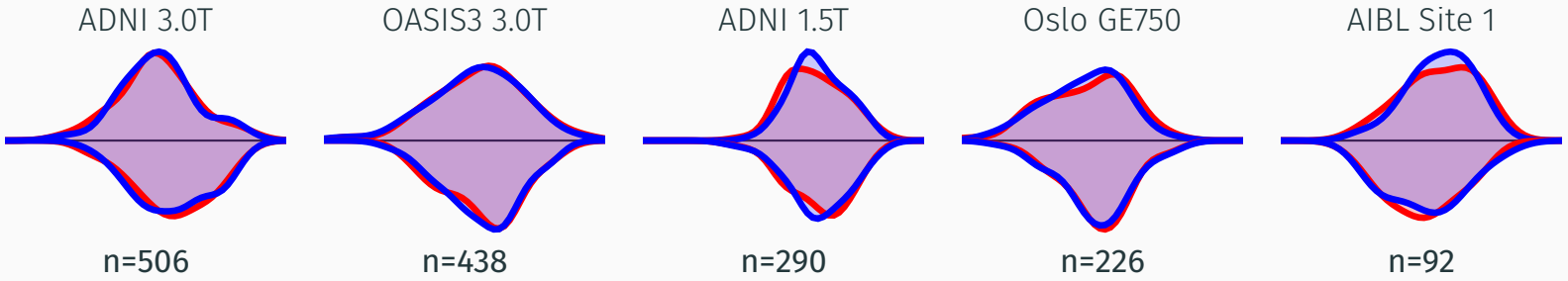
Theoretical background

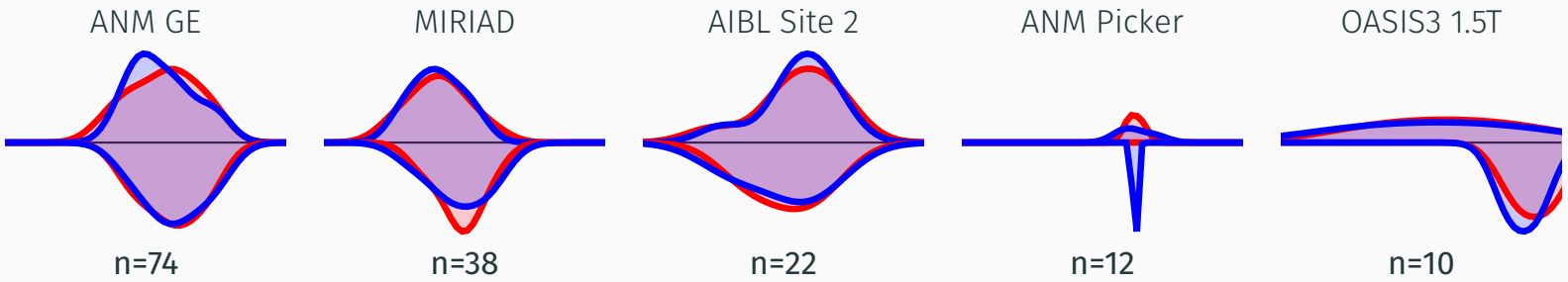


Dementia background

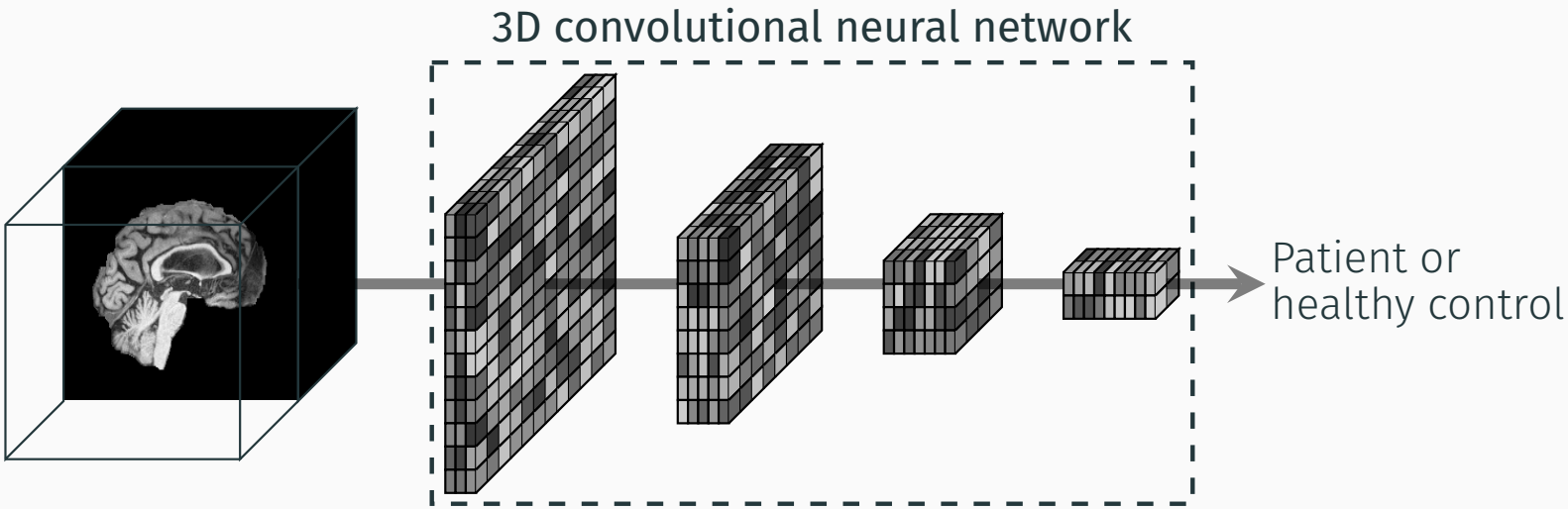
Modelling


FEMALE
MALE
55
60
65
70
75
80
85
90
95
Controls
Patients
n=1708

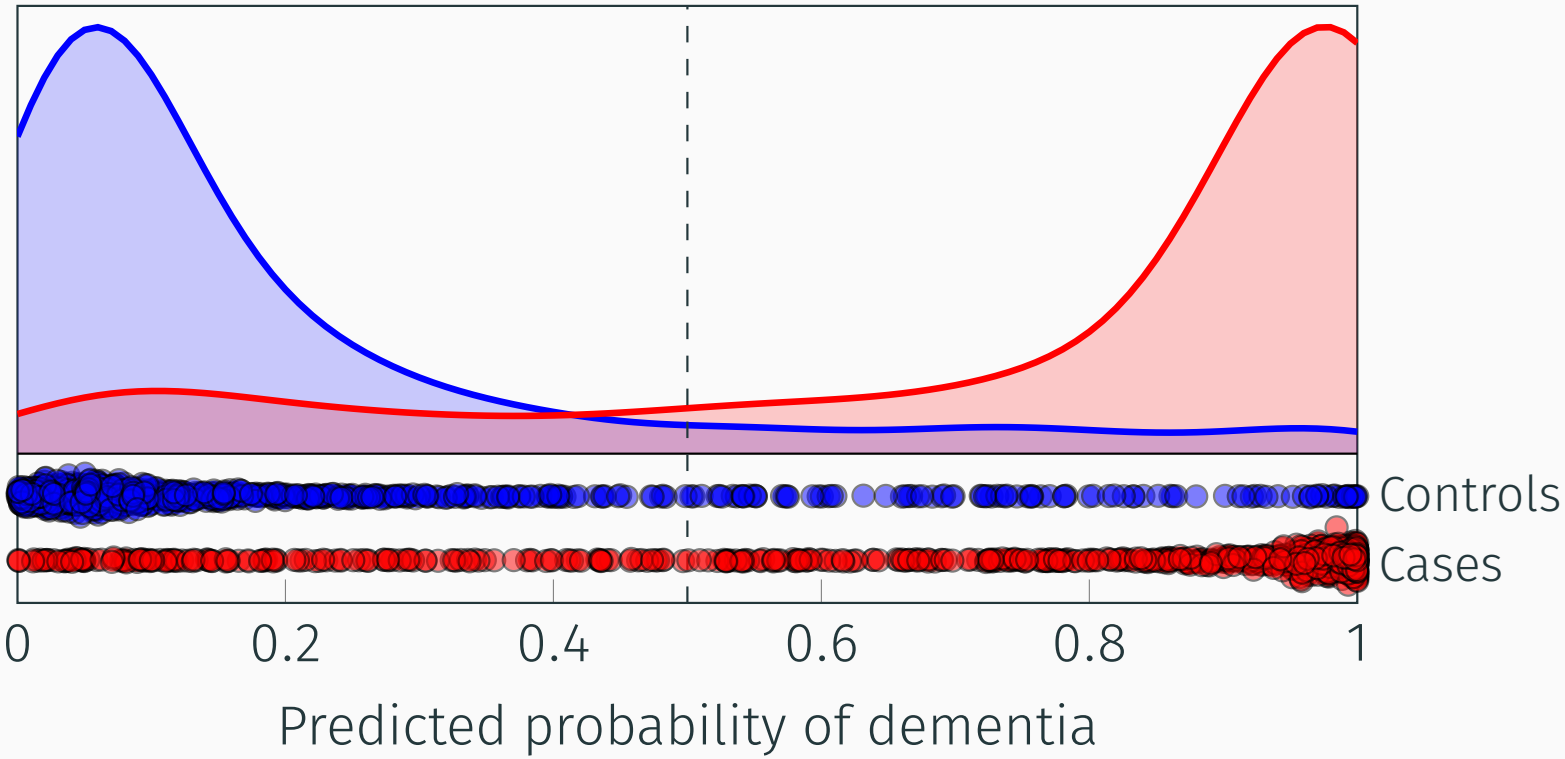

ADNI 3.0T
n=506
OASIS3 3.0T
n=438
ADNI 1.5T
n=290
Oslo GE750
n=226
AIBL Site 1
n=92


ANM GE
n=74
MIRIAD
n=38
AIBL Site 2
n=22
ANM Picker
n=12
OASIS3 1.5T
n=10

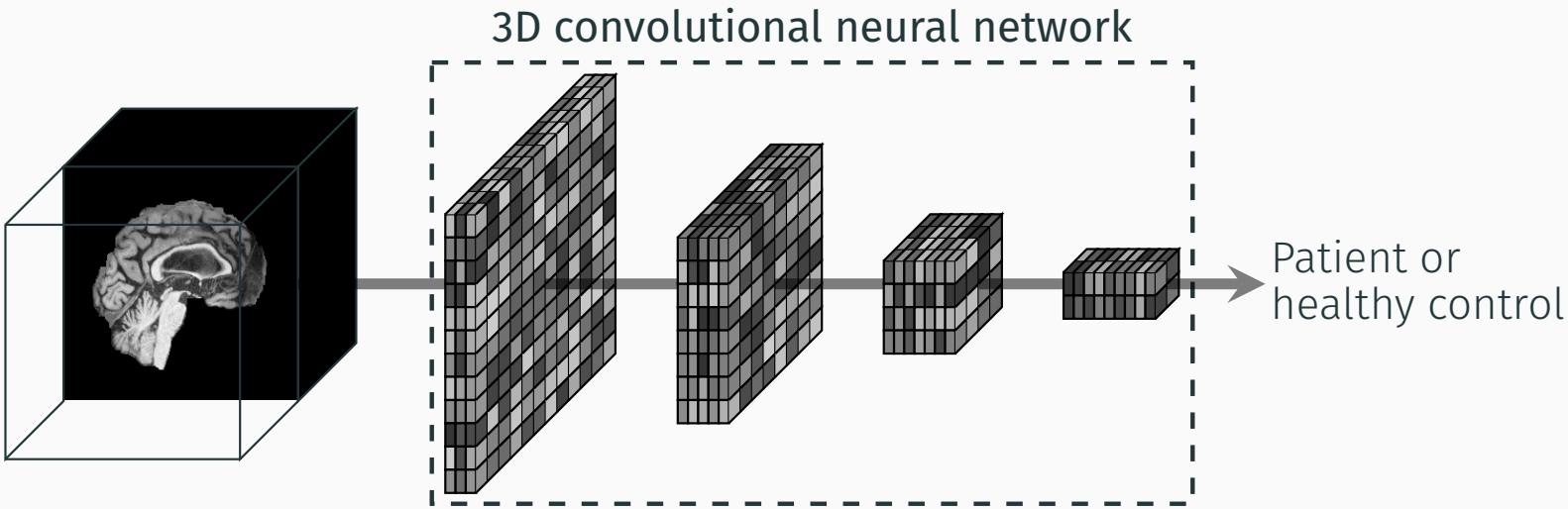
Modelling


3D convolutional neural network
Patient or
healthy control

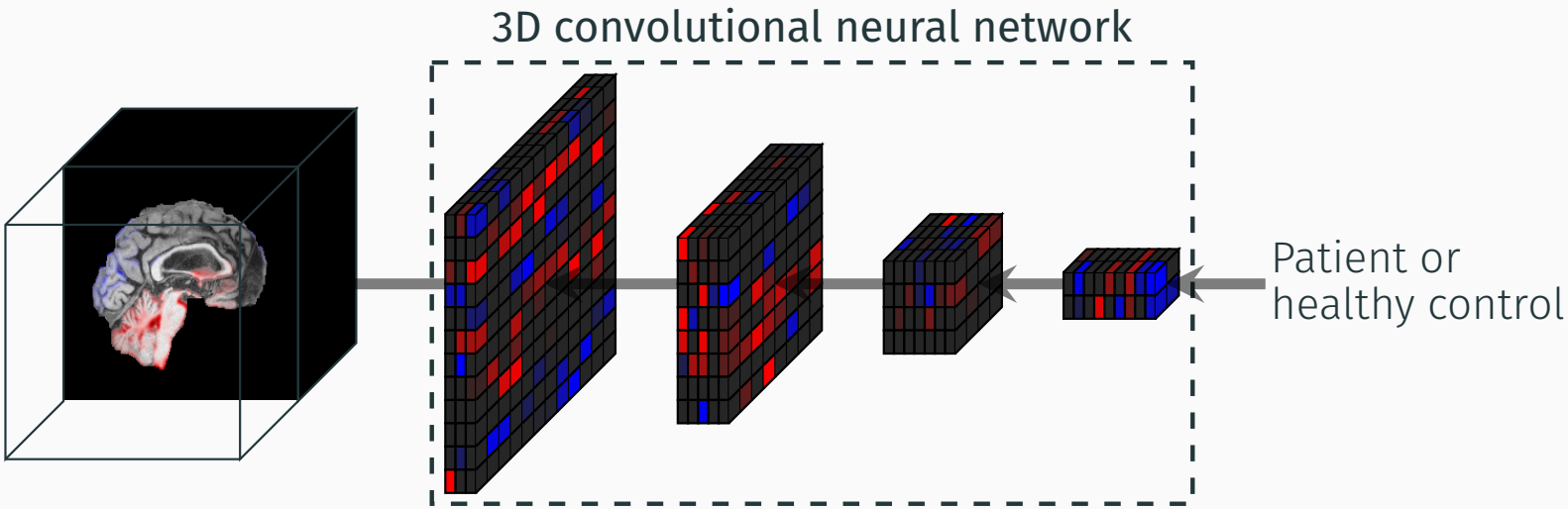
Modelling


Controls
Cases
0
0.2
0.4
0.6
0.8
1
Predicted probability of dementia

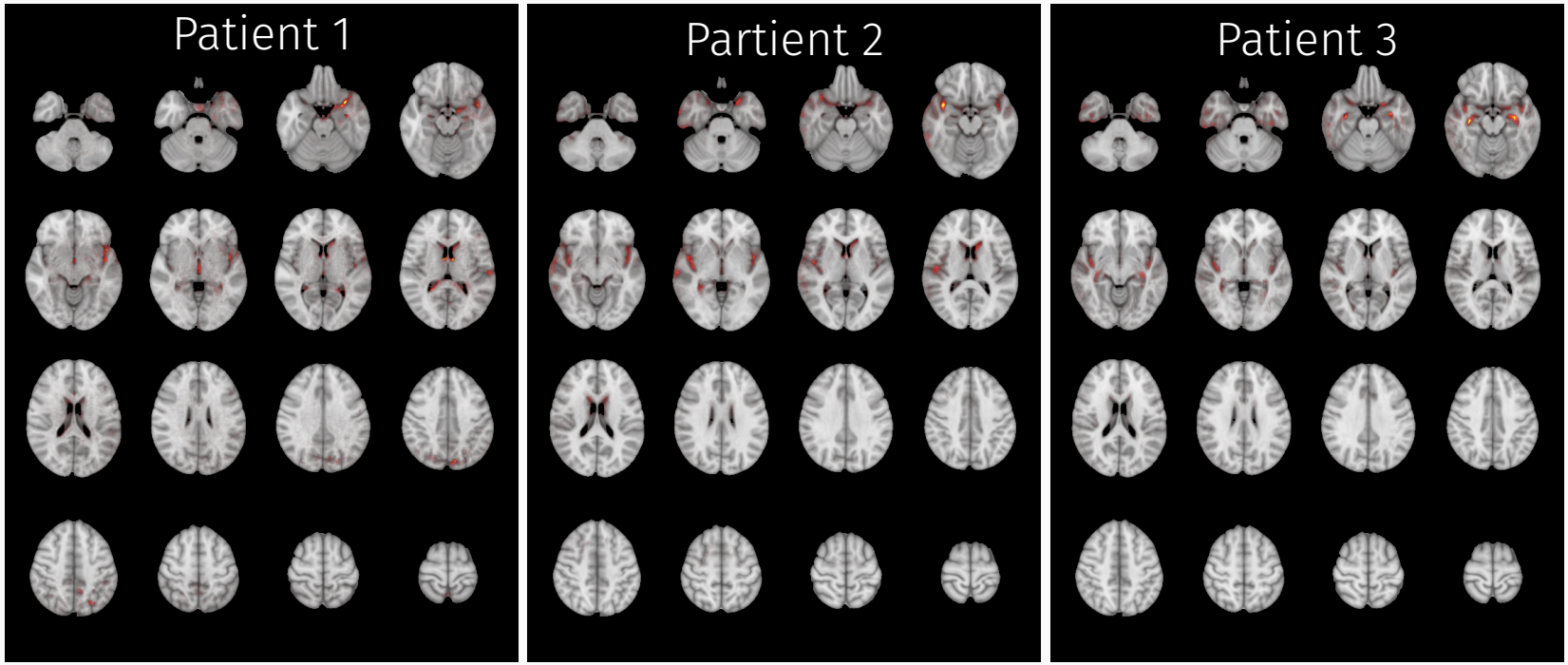
Modelling


3D convolutional neural network
Patient or
healthy control

Modelling

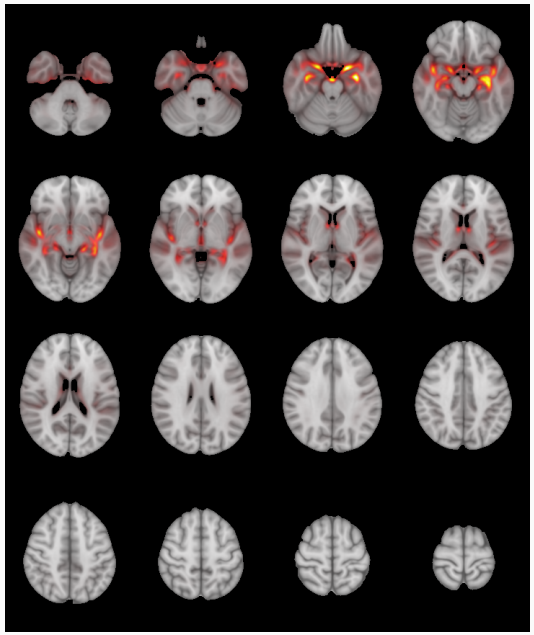

3D convolutional neural network
Patient or
healthy control

Modelling



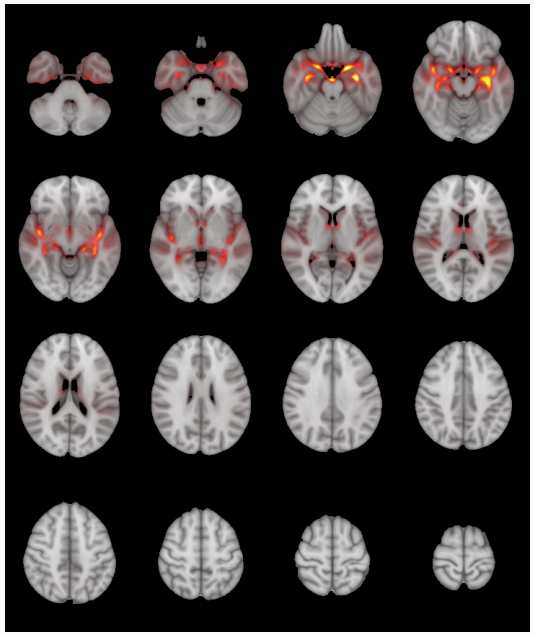
Modelling

LRP

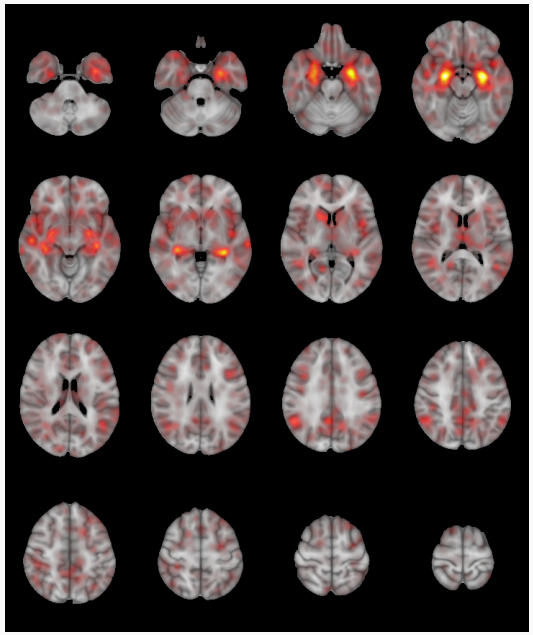


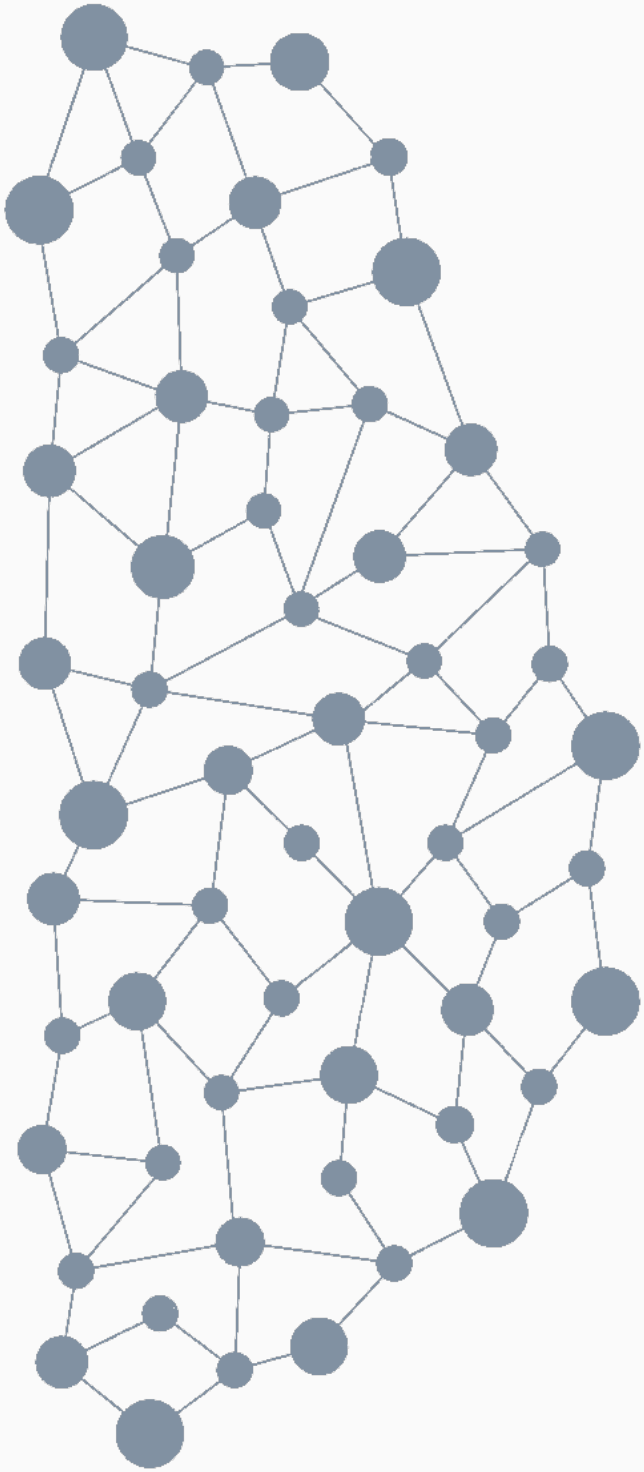
Modelling

LRP



GingerALE





Thank you for your attention!

esten@baba-vision.com

baba.vision