

# Explainable AI and the brain

Characterizing heterogeneity in diverse clinical cohorts

---

Esten H. Leonardsen

24.10.24



UNIVERSITETET  
I OSLO

1. Theoretical background
  - a. Artificial neural networks
  - b. Explainable AI
2. Explainable AI and dementia
3. Explainable AI and brain age

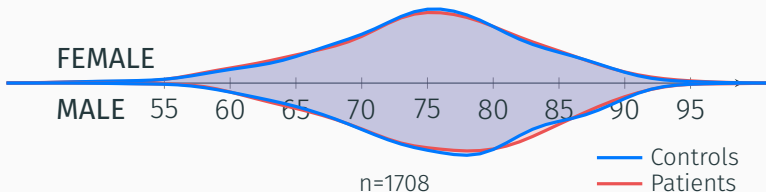
# Explainable AI and dementia predictions

---

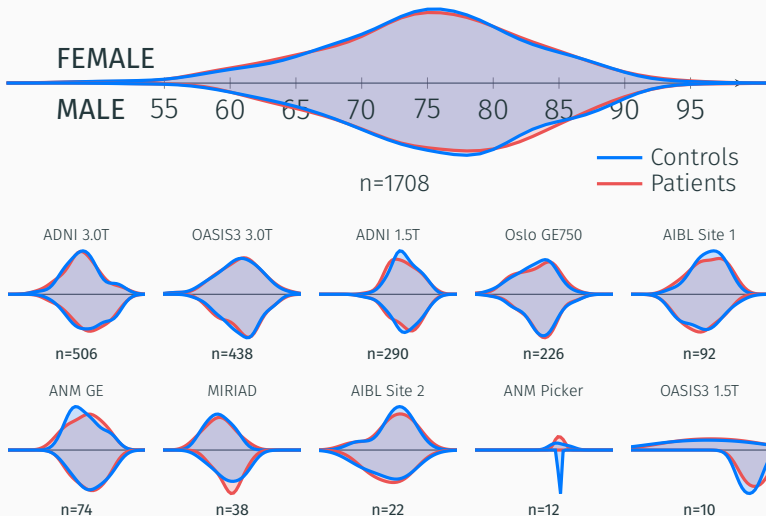


UNIVERSITETET  
I OSLO

# Explainable dementia classification: Dataset



# Explainable dementia classification: Dataset

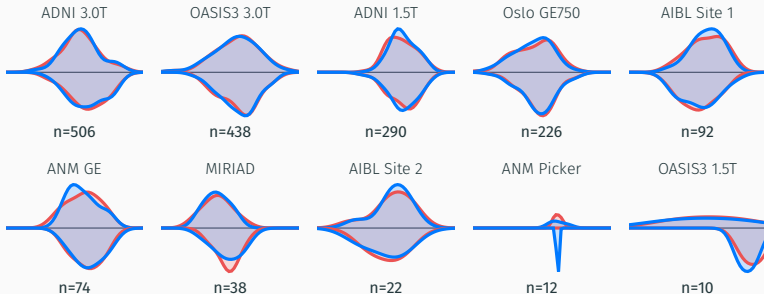


# Explainable dementia classification: Dataset

ADNI:  
Probable  
Alzheimer's disease

OASIS3:  
Dementia

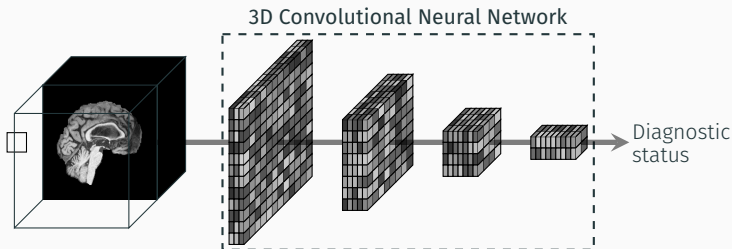
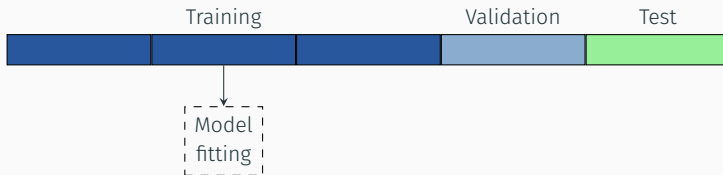
Oslo:  
Alzheimer's disease,  
Vascular dementia,  
Unspecified dementia



# Explainable dementia classification: Modelling

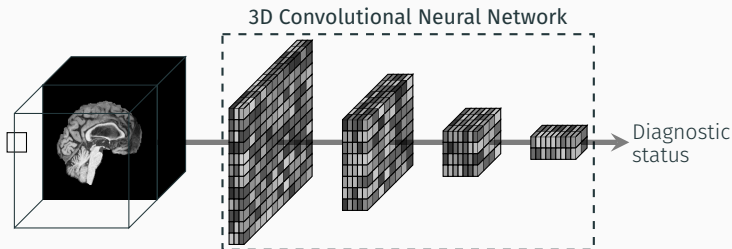
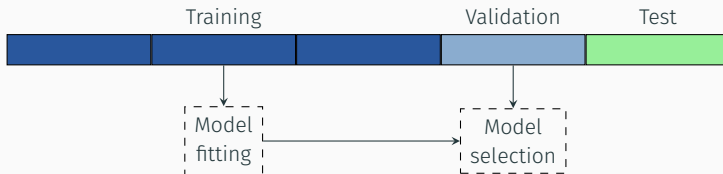


# Explainable dementia classification: Modelling

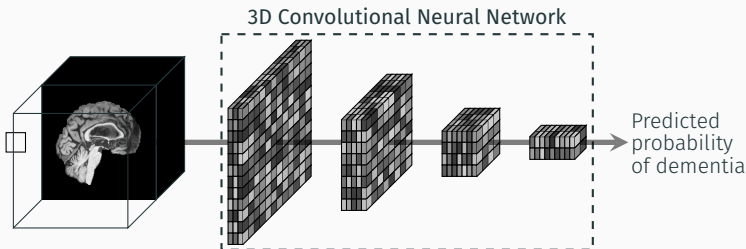
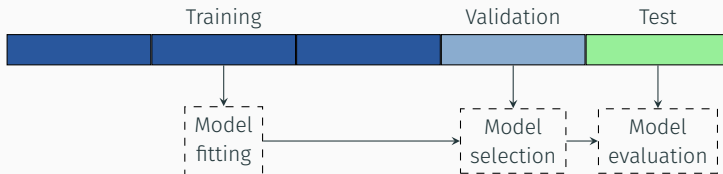




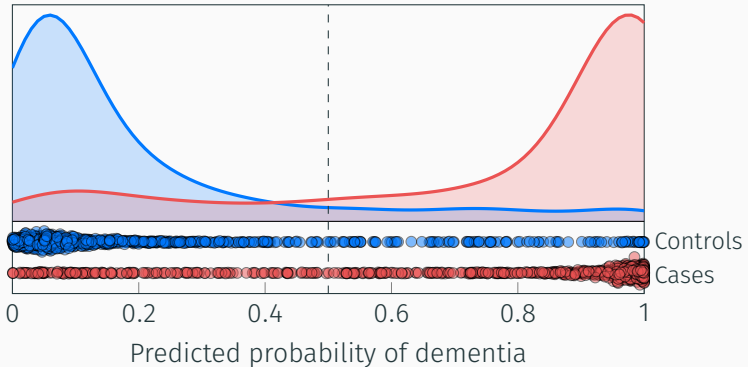
# Explainable dementia classification: Modelling



# Explainable dementia classification: Modelling



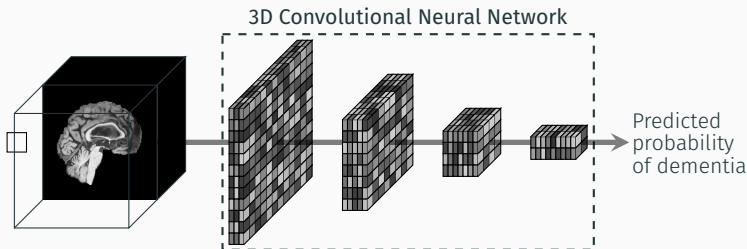
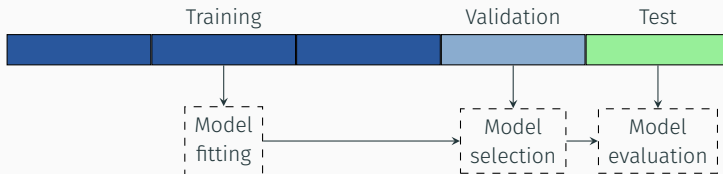
# Explainable dementia classification: Modelling



AUC=0.91, balanced accuracy=85%



# Explainable dementia classification: Modelling



# Explainable dementia classification: Modelling

