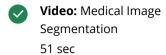
## Explore MRI data



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**Lab:** Explore MRI data 1h

### Image segmentation

- Video: MRI Data and Image Registration 3 min
- Video: Segmentation
- **Lab:** Get a sub section
- Reading: Convolutional
  Neural networks
  10 min
- Video: 2D U-Net and 3D U-Net 2 min
- Reading: More about U-Net (Optional)
  10 min
- Lab: Implement U-Net
  1h
- Video: Data augmentation for segmentation
  2 min
- Video: Loss function for image segmentation
  3 min

#### **Practical considerations**

- Video: Different Populations and Diagnostic Technology
  1 min
- Video: External validation 2 min
- Video: Measuring Patient outcomes
  3 min

## Quiz week 3

Programming: 3D Image Segmentation

Summary of AI for Medical Diagnosis

# More about U-Net (Optional)

For a brief video introduction to U-Net by the original creators, Olaf Ronneberger, Philipp Fischer, Thomas Brox, please visit their site <u>U-Net: Convolutional Networks for Biomedical Image Segmentation</u>.

If you would like more detail, start with this blog post by Heet Sankesara "UNet".

To go deeper, you can read the original research paper <u>U-Net: Convolutional Networks for Biomedical Image Segmentation</u> by Olaf Ronneberger, Philipp Fischer, Thomas Brox

As a reminder, you will be using a pre-trained U-Net model, and so you can still complete this course without knowing the specific details of implementing the U-Net from scratch.







