

Explore MRI data

✔ **Video:** Medical Image Segmentation
51 sec

📄 **Lab:** Explore MRI data
1h

Image segmentation

✔ **Video:** MRI Data and Image Registration
3 min

✔ **Video:** Segmentation
3 min

📄 **Lab:** Get a sub section
1h

✔ **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

📋 **Practice Quiz:** Week 3 Quiz: Segmentation on medical images
9 questions

Programming: 3D Image Segmentation

🔗 **Programming Assignment:** Brain Tumor Auto-Segmentation for Magnetic Resonance Imaging (MRI)
3h

Summary of AI for Medical Diagnosis

✔ **Video:** Congratulations!
1 min

✔ **Reading:** Acknowledgements
10 min

✔ **Reading:** Citations
10 min



Citations

Week 1 and Week 2

[Chest X Ray 8 Dataset](#)

[CheXNeXt](#)

[Dermatology](#)

[Ophthalmology](#)

[Pathology](#)

Week 3

[Data - decathlon 10 challenge](#)

[Decathlon 10 paper](#) (contains brief background on CT — see task_01 (brain tumour))

[3D U-Net](#)

[U-Net](#)

✔ Complete

