How we preserve data privacy?

Security For Medical Data

OUR MAİN ISSUES

- Handling personal data shown on the image

- Handling personal data that is on DICOM META DATA

- Striping unique squll parts from brain MRI that is on NIFTI format data

HIPAA

Insurance Portability and Accountability Act

Techniques Used in MRI Privacy

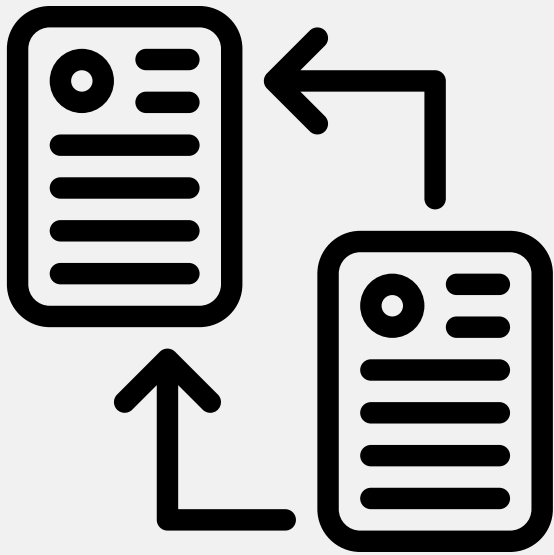|	
1.De-identification	6.Decoy File
2.Cryptography	7.Synthetic Data Generation
3.Data Hiding	8.Randomized Order
4.Differential Privacy	9.Medical Imaging Devices
5.Federated Learning	10.Data Generation and Augmentation

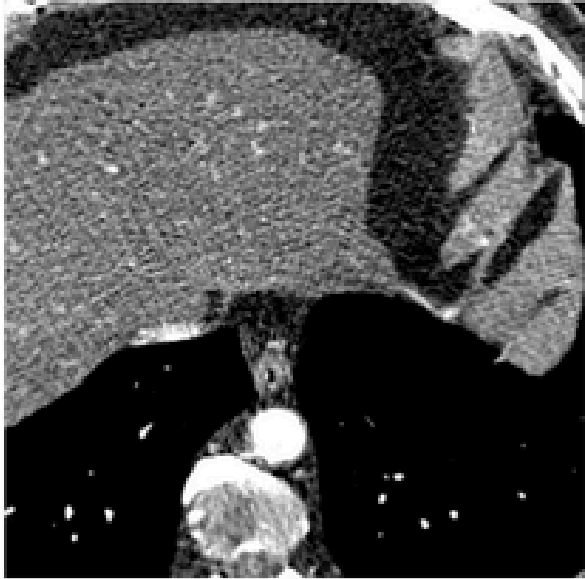|	DICOM	NIFTI
File Extension	----------	.nii .nii.gz
Header Contains	many fields, protected health information, hospital-related data	image meta-data no paitient informations
Storage	Diffrent directories per subject, more complex data structure	Diffrent files can be in same directory
File Representation	One slice	3D image

Data Embedding

Data embedding (data embedding) refers to discreetly embedding a data setting into another data setting (for example, an image).
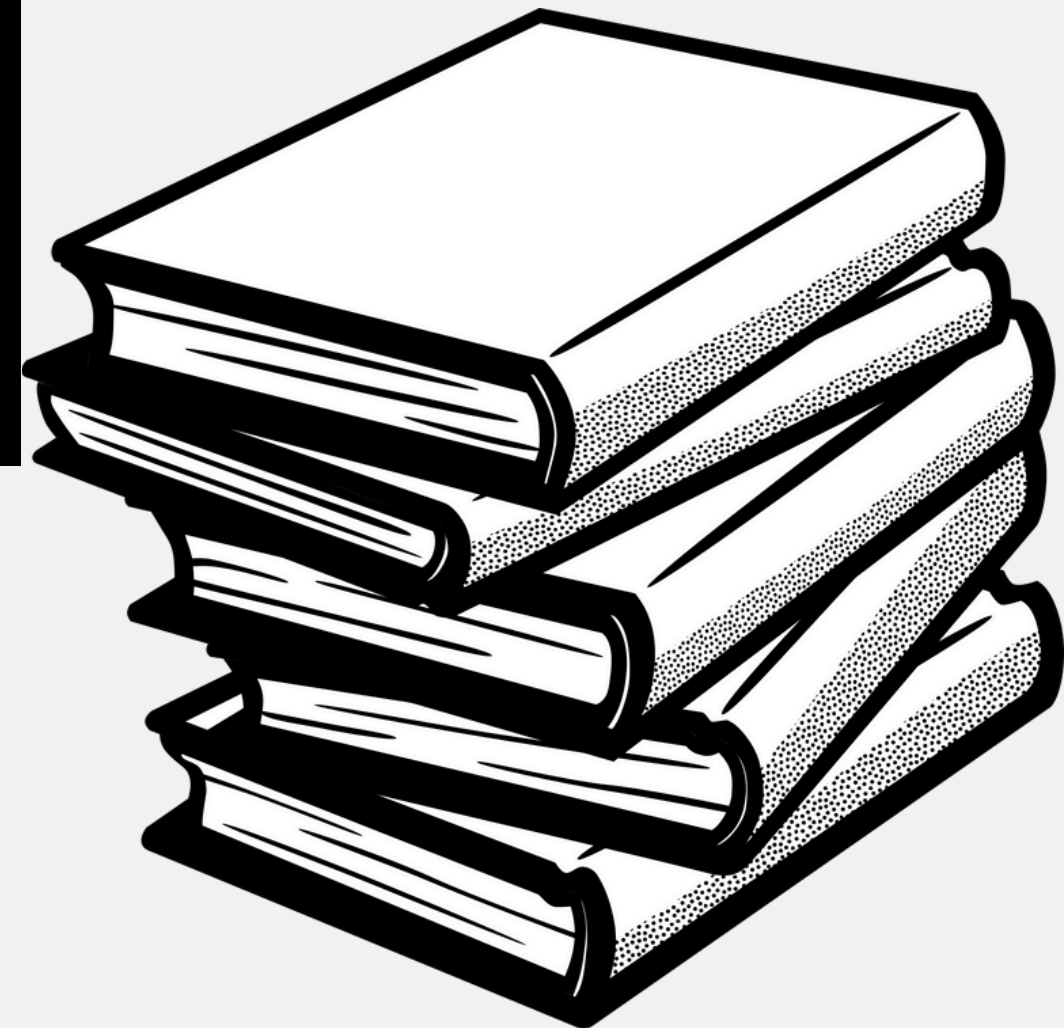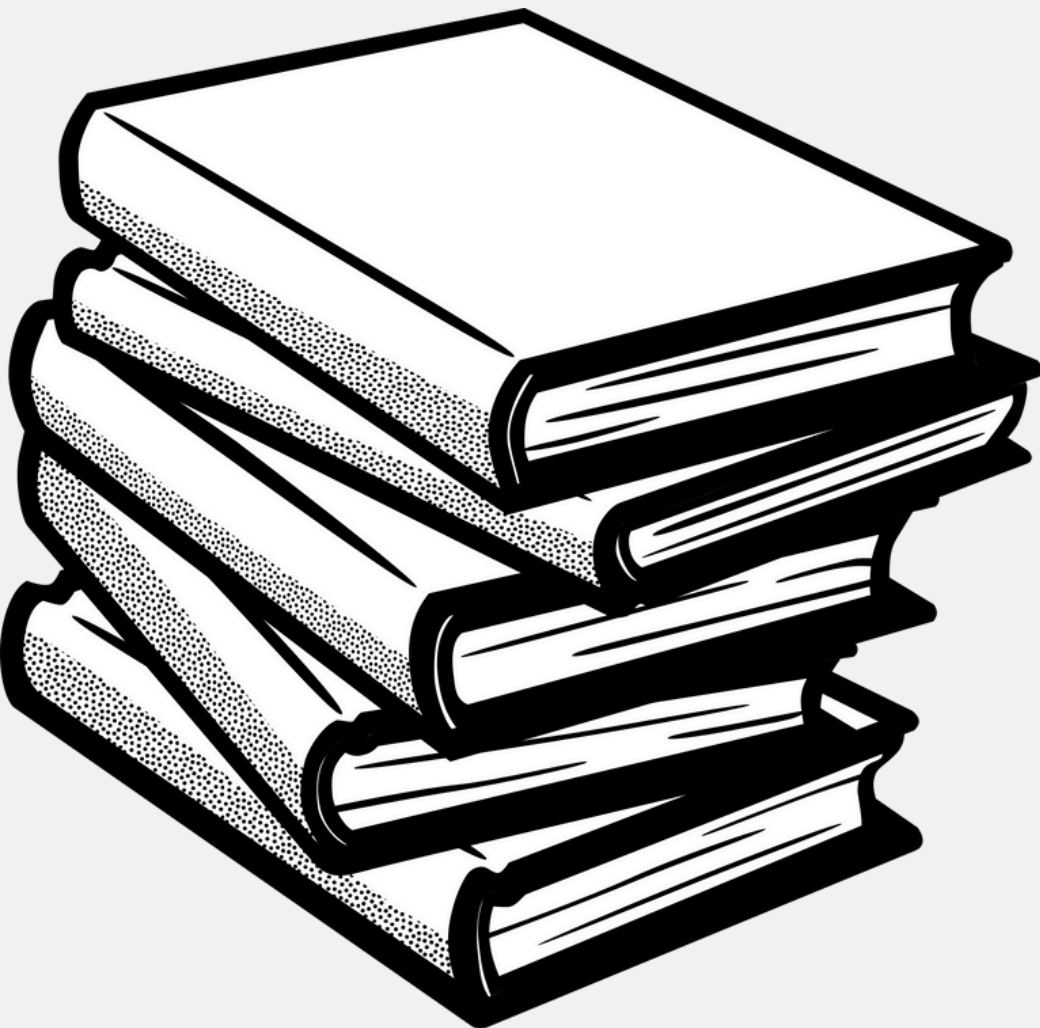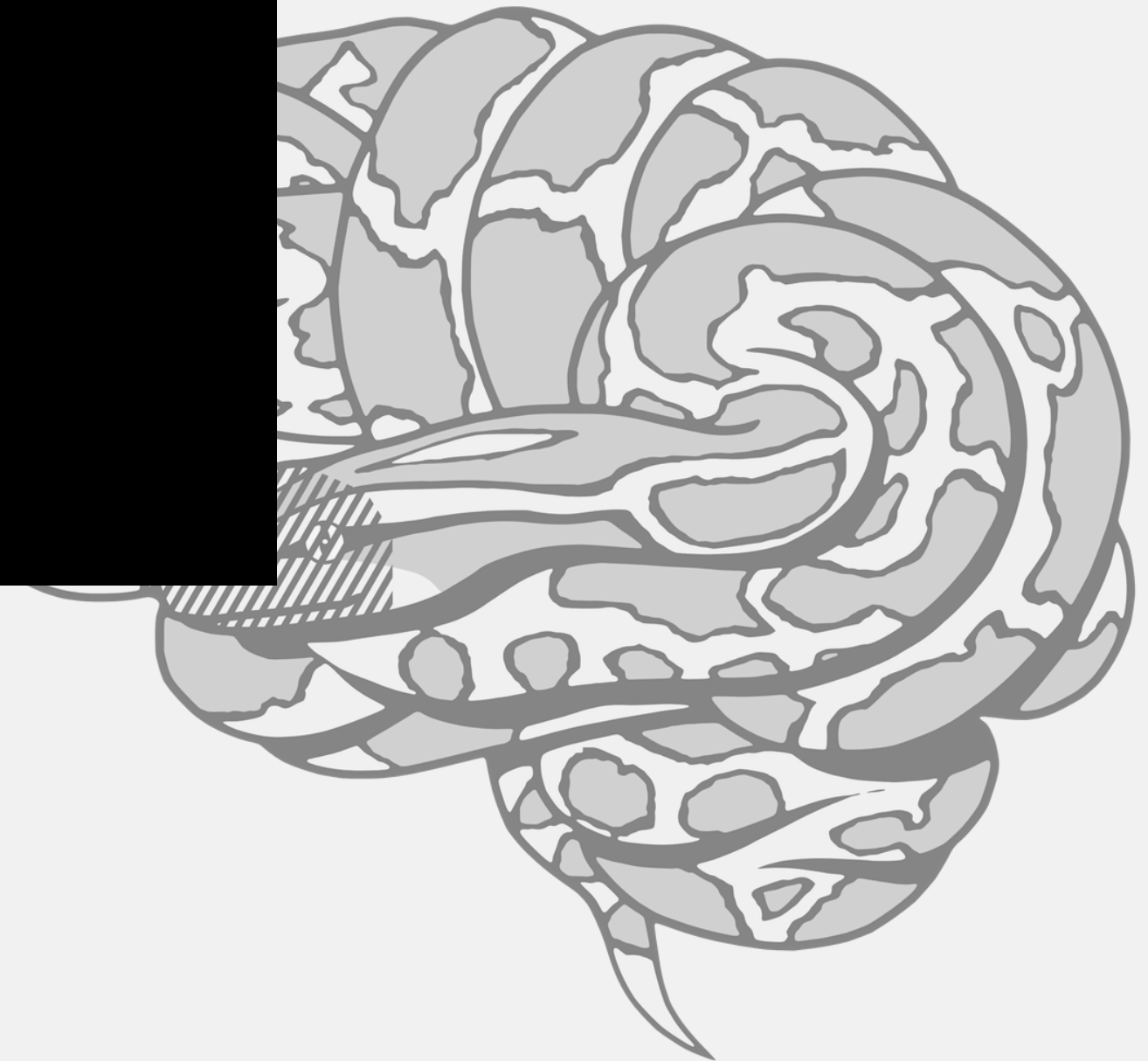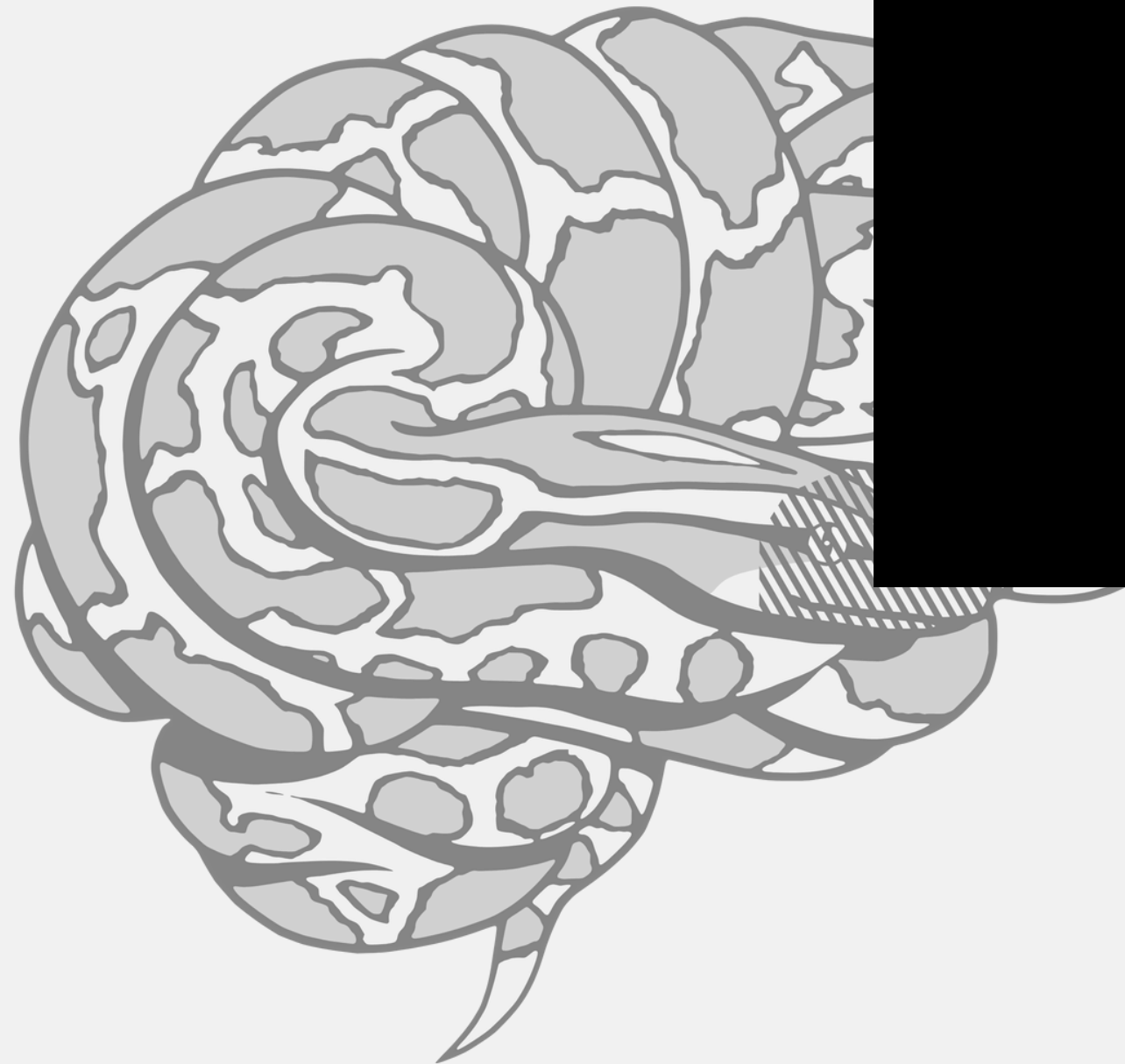
IMPORTANT LIBRARIES

pydicom
cryptography.fernet
nibabel (NiBabel)
subprocess

Anonymization Methods for Personal Health Data

- **Suppression**
- **Randomization**
- **Pseudonymization**
- **Bucketization**
- **Cryptographic Approaches**

FSL (FMRIB Software Library)

a suite of software tools and libraries used for analyzing and processing brain imaging data.

WHAT WE CAN DO WITH FSL

- Preprocessing
- Segmentation
- Visualization
- Statistical Analysis
- Brain Extraction

Thanks For Your Time

We offer our respect to

L*** K*****
A***** K*****
R**** Ö******
A**** K****
A**** A****

individuals who shared their data with us

**Data privacy and protection remain vital, now and always.

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