



Flash Talks/Poster session: GDPR-compliant human neuroimaging data sharing using Shanoir

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Flash Talks/Poster session

GDPR-compliant human neuroimaging data sharing using **Shanoir**

Camille Maumet

Inria, Univ Rennes, Inserm, CNRS, IRISA

10 years of brain data sharing...



A horizontal timeline bar with a light purple background and vertical tick marks for each year from 2014 to 2024.

2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024

10 years of brain data sharing...

2014 2015 2016 2017 2018 2019 2020 2021 2022 2023 2024



Why sharing neuroimaging data?

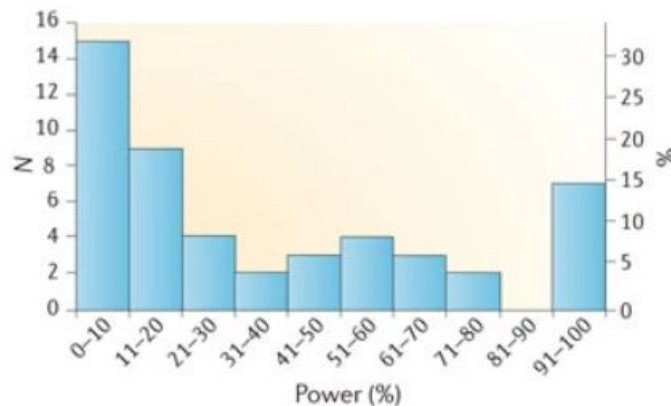
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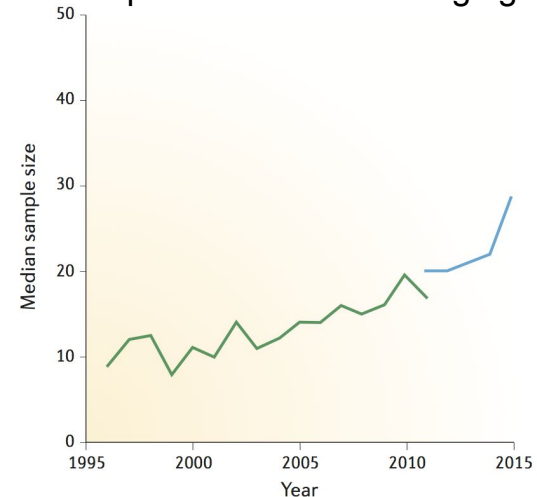
Small samples and low statistical power

Power of neuroscience studies



(Button et. al, 2013)

Sample sizes in neuroimaging



(Poldrack et. al, 2013)

High rate of **false positives** in the literature

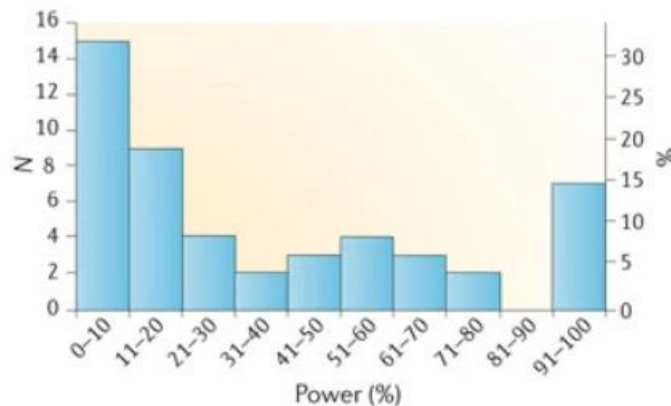
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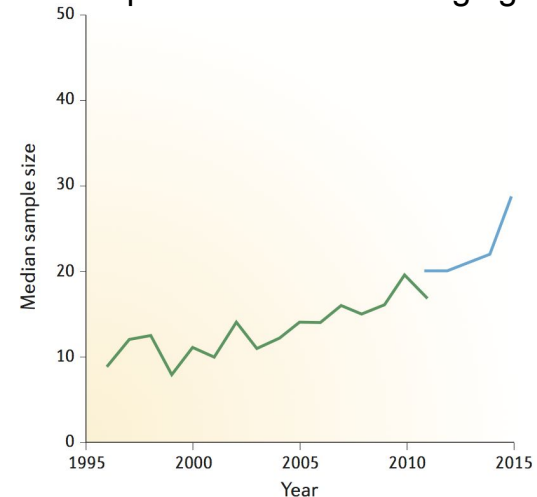
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High rate of **false positives** in the literature

Solution: Data sharing to get to
larger samples

Neuroimaging data sharing

Single study

30 sub.



OpenNEURO



NEUROVAULT

NITRC



OSF

Neuroimaging data sharing

Single study

30 sub.



OpenNEURO



NEUROVAULT

NITRC

OSF

Consortium

1000 sub.



ABIDE
Autism Brain Imaging
Data Exchange

1000 Functional
Connectomes Project



CORR
CONSORTIUM FOR
RELIABILITY AND
REPRODUCIBILITY



Neuroimaging data sharing

Single study

30 sub.



OpenNEURO



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CORR
CONSORTIUM FOR
RELIABILITY AND
REPRODUCIBILITY



1000 Functional
Connectomes Project



HUMAN
Connectome
PROJECT

Cohort

100 000 sub.

biobank
Improving the health of future generations

10 years of brain data sharing...

2014 2015 2016 2017 2018 2019 2020 2021 2022 2023 2024

Why sharing neuroimaging data?



10 years of brain data sharing...

2014 2015 2016 2017 2018 2019 2020 2021 2022 2023 2024

Why sharing neuroimaging data?

Generalizability and fairness

X-ray: Lung opacity detection

Model trained on male images, tested on female images



(Larrazabal et. al, 2020)

Biased models

10 years of brain data sharing...

2014 2015 2016 2017 2018 2019 2020 2021 2022 2023 2024

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(Larrazabal et. al, 2020)

Biased models



Solution: Decentralized data sharing
to get **more diverse samples**

10 years of brain data sharing...

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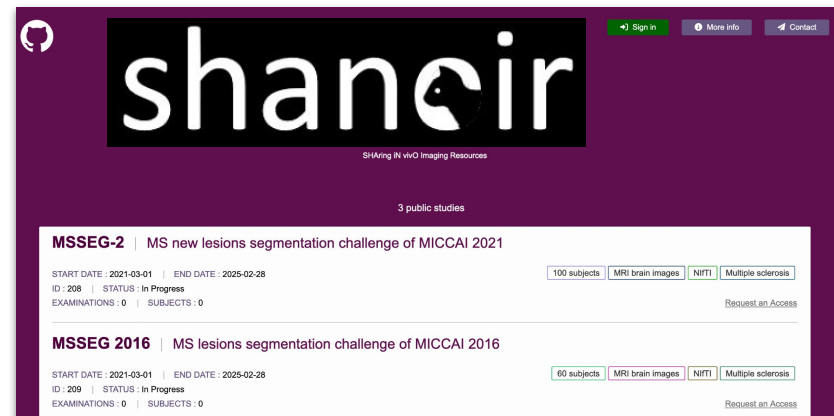


(Larrazabal et. al, 2020)

Biased models



Solution: Decentralized data sharing
to get **more diverse samples**



Web-based application for **medical imaging storage** and

- Share data with a **Data user agreement**
- **Open source** software
- **Shared governance**

Flash Talks/Poster session

GDPR-compliant sharing of human neuroimaging data using Shanoir

presented by Camille Maumet at EOSC France Tripartite Event (Sept. 2024)

A web-platform for medical imaging data

With the impetus towards a more open science, researchers are looking for practical solutions to share more data in support of their findings. In the field of brain imaging, European researchers must comply with the General Data Protection Regulation (GDPR) when sharing human neuroimaging data.

We present **Shanoir**, a long-standing open source web-platform for medical imaging data that can be used to share neuroimaging data in compliance with GDPR.






<https://neuroinfo.org.knowinfr.fr/>


<https://www.osf.io/shanoir/>

Data sharing with Shanoir

Brain images



Directly identifiable information removed

3D image

→

Non anonymous (Individualisation)

Data sharing must comply with GDPR

(Open Brain Consent, 100% edit)

3 steps

- 1- List shared datasets
<https://shanoir.org/fr/>
- 2- Sign the Data User Agreement
- 3- Access the data

→



Further resources

Shanoir is Open Source software: <https://github.com/florian-shanoir-ng>

Developments are led by a community of members through the Shanoir Consortium: <https://project.shanoir.fr/shanoirconsortium/>

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Shanoir core development is supported by
Shanoir Consortium (InriaSoft) and FLJ-IAM



GDPR-compliant human neuroimaging data sharing using **Shanoir**

Camille Maumet

Shanoir core development is supported by:
Shanoir Consortium (InriaSoft) and **FLI-IAM**

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