Human Brain Project

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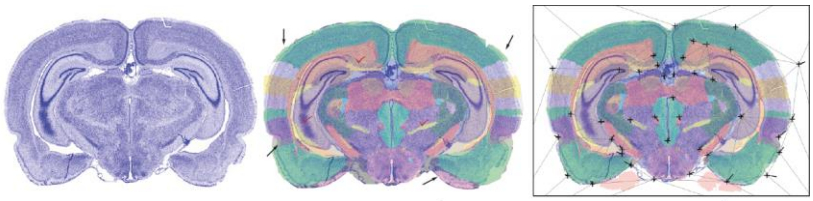
QuickNII and VisuAlign



NEURAL SYSTEMS LABORATORY
UNIVERSITY OF OSLO, NORWAY

SPATIAL INTEGRATION WHICH ENABLES RELIABLE QUANTIFICATION STUDIES

RODENT BRAIN IMAGE REGISTRATION TO A VOLUMETRIC REFERENCE ATLAS

QuickNII is a stand-alone tool for user guided affine spatial registration of sectional image data to a 3D mouse or rat reference atlas space. The reference atlas is transformed to match anatomical landmarks in the corresponding experimental images without introducing transformations in these original images.
All orientation planes are supported (Coronal, Sagittal and Horizontal) and any cutting angle deviations are supported.

Further precision in registration can be achieved with the VisuAlign software performing a non-linear registration of the QuickNII output.

THE SPATIAL INTEGRATION ACHIEVED WITH THESE TOOLS ARE THE BASIS FOR ATLAS BASED QUANTITATIVE STUDIES PERFORMED WITH THE QUINT WORKFLOW
HTTPS://EBRAINS.EU/SERVICE/QUINT

USER FRIENDLY AND ROBUST IMAGE REGISTRATION APPLICATIONS ARE HIGHLY DEMANDED BY THE NEUROSCIENCE COMMUNITY.

AREAS

Image Analysis | 3D Brain Atlases | Spatial integration

Tech sheet designed and co-developed by Universidad Politécnica de Madrid

Co-funded by the European Union

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COMPETITIVE ADVANTAGES

QuickNII and VisuAlign are compatible with the Allen Mouse Brain Atlas (CCFv3, 2015 and 2017) and the Waxholm Atlas of the Spraque Dawley rat (v2 and v3) whereas the commercial software NeuroInfo (MBF) is available for Allen Mouse brain atlas only.

New atlas templates can be implemented in our tools in the future.

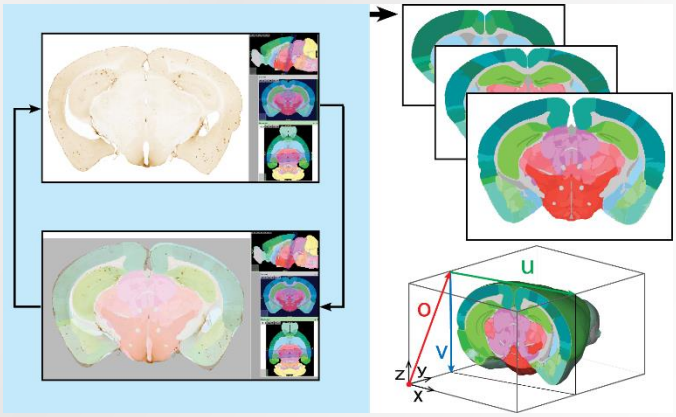

IMAGE REGISTRATION TO ATLAS ENABLES SPATIAL REGISTRATION OF THE DATA

APPLICATION & MARKET POTENTIAL

User friendly and robust image registration applications are highly demanded by the Neuroscience community.

Image registation taillored for atlas based analysis

Growing user community

REFERENCES

Available on EBRAINS

- https://wiki.ebrains.eu/bin/view/Collabs/quicknii-and-visualign
- https://ebrains.eu/service/quint
- Number of downloads since start: QuickNII: 3700, VisuALign: 400 by Mai 2021
- Users also include the Korea Brain Institute and the Kaczorowski Lab at The Jackson Laboratory (Bar Harbor).
- QuickNII is included in the BRAIN Initiative Cell Census Network (BICCN) Tools and Analysis list

CONTACT

Maja Puchades PhD
Nesys laboratory | Oslo | Norway
Group leader: Jan Bjaalie MD, PhD
Email:
m.a.puchades@medisin.uio.no

TECHNOLOGY READINESS LEVEL

1 2 3 4 5 6 **7** 8 9

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