Digital Total - Computing & Data Science an der Universität Hamburg und in der Wissenschaftsmetropole Hamburg



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## MRI Total: Towards an automated, standardized, reproducible, version-controlled, transparent, FAIR, quality-assured, privacy-compliant processing pipeline for MRI data

Neuroscientists at University of Hamburg (UHH) collect thousands of hours of human brain imaging data per year. However, this data treasure is not systematically standardized, stored, or controlled for quality. We propose an institution-wide processing pipeline for human brain imaging data that connects state-of-the-art open-source neuroinformatics software tools and leverages UHH computational infrastructure, including the object storage and high-performance computing cluster. Immediately following collection, data are transformed to the Brain Imaging Data Structure (BIDS) standard and submitted to in-depth automated quality assurance (MRIQC). In addition, an interactive dashboard allows browsing metadata of available data sets and MRI quality metrics, fostering transparency and scientific exchange. This project promises high-quality reproducible research outputs and boost the efficiency of scientific workflows.

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## Keywords

neuroimaging reproducibility open data quality assurance FAIR

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