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Dear Editors,

We would like to submit our manuscript entitled *"NiChart: A machine learning oriented neuroimaging brain chart, derived from 71,820 MRI scans, and its methodology"*, by Guray Erus, *et al.*, to Nature Medicine.

Our paper presents a large multi-institutional effort to integrate and harmonize brain MRI scans from approximately 54,000 individuals (as well as approximately 18,000 longitudinal follow-ups from a subset of individuals) from 23 studies, many of which involve multi-site cohorts. We used this data to derive normative statistical summarizations of brain structure, pre-trained harmonization models and machine learning models capturing imaging signatures of brain aging, as well as of Alzheimer's Disease. NiChart presents the foundation for a dimensional brain chart which, in view of its continuous expansion with a variety of new studies, aims to characterize structural and functional brain changes due to aging, neurodegenerative and neuropsychiatric diseases, and to leverage machine learning methods for deriving multi-variate imaging signatures.

Please note that we recently had a communication with Dr. Lorenzo Righetto for a pre-inquiry for submission. Dr. Righetto expressed interest in our paper and confirmed its suitability for formal review.

Sincerely,

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Secondary appointment, Electrical and Systems Engineering,
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&

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Reviewer suggestions:

- Dr. Vince Calhoun, Professor and Director of the tri-institutional Center for Translational Research in Neuroimaging and Data Science (TReNDS; http://www.trendscenter.org), a joint effort between Georgia State, Georgia Tech, and Emory University. Dr. Calhoun is an international leader in computational neuroimaging, big data analytics and AI.
- Dr. Brian Caffo, Professor at Johns Hopkins Bloomberg School of Public Health. Dr. Caffo is an expert in advanced neuroimaging statistics.
- Dr. Andrew Zalesky, Associate Professor in Engineering and Medicine at the University of Melbourne, Australia. Dr. Zalesky is a leader in computational neuroimaging.
- Dr. Bennett Landman, Professor of Electrical and Computer Engineering at Vanderbilt University. Dr Landmann is an expert in computational neuroimaging, big data analytics and AI
- Dr. Xenios Papademitris. Professor of Biomedical Informatics & Data Science, and Radiology & Biomedical Imaging at Yale University. Dr Papademitris is a leader in open source computational neuroimaging software.