Fwd: Inquiry about paper submission to Nature Medicine

Davatzikos, Christos <Christos.Davatzikos@pennmedicine.upenn.edu>
Mon 2/19/2024 7:56 AM

To:Erus, Guray <Guray.Erus@pennmedicine.upenn.edu>;Getka, Alexander <Alexander.Getka@Pennmedicine.upenn.edu>; Aidinis, George <George.Aidinis@Pennmedicine.upenn.edu>
Cc:Satterthwaite, Theodore <sattertt@pennmedicine.upenn.edu>;Nasrallah, Ilya <Ilya.Nasrallah@pennmedicine.upenn.edu>; Fan, Yong <Yong.Fan@pennmedicine.upenn.edu>;Shou, Haochang <hshou@pennmedicine.upenn.edu>;Shinohara, Russell T <russell.shinohara@pennmedicine.upenn.edu>;Wolf, Daniel <danwolf@pennmedicine.upenn.edu>

Great news, our NiChart paper will be sent out for review at NM!

Guray, the cover letter must VERY CLEARLY indicate that we have already run a pre-inquiry by Dr. Lorenzo Righetto, so that the paper goes to him

***I think that we need to immediately add more ML models, e.g SZ and Zhijian's subtypes

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From: Lorenzo Righetto <lorenzo.righetto@nature.com>
Sent: Monday, February 19, 2024 4:29:16 AM
To: Davatzikos, Christos <Christos.Davatzikos@pennmedicine.upenn.edu>
Subject: [External] RE: Inquiry about paper submission to Nature Medicine

Dear Christos,

Thanks for sending this to me. I have read the paper with interest and I think we can send it out for formal peer review. If you decide to do so, please including the following checklists to expedite the process:

Reporting Summary: https://www.nature.com/documents/nr-reporting-summary.pdf

Editorial Policy Checklist: https://www.nature.com/documents/nr-editorial-policy-checklist.pdf

Please note that the Reporting Summary and Editorial Policy Checklist are dynamic 'smart pdfs' that must be downloaded and completed in Adobe Reader (i.e. they cannot be opened in a web browser). If you would like to reference the guidance text as you complete the files, please access reference versions at http://www.nature.com/authors/policies/availability.html#requirements.

Please also submit a completed MI CLAIM checklist (https://www.nature.com/articles/s41591-020-1041-y) for ML related studies and make sure that the reviewers can access the code used in the study.
Let me know if you have any questions.

Best

Lorenzo

From: Davatzikos, Christos <Christos.Davatzikos@pennmedicine.upenn.edu>
Sent: Monday, February 12, 2024 9:57 PM
To: Lorenzo Righetto <lorenzo.righetto@nature.com>
Subject: Inquiry about paper submission to Nature Medicine

Dear Lorenzo,

I apologize for an offline message, but I wanted to run this paper by you for feedback, before we formally submit to Nature Medicine. This is a major paper that we have been working on for

over 5 years now, and I believe that it will evolve into a major community resource. It is an extensive effort to integrate, harmonize, and analyze a diverse set of ~80,000 brain MRI scans from 35 studies (some of it is on-going expansion). This effort has allowed us to not only build normative models of brain structure in healthy and diseased populations, but also to extract robust (to scanner/protocol/cohort variations) machine learning based imaging signatures (e.g. brain age, Alzheimer's and schizophrenia signatures, disease subtyping, imaging signatures of cardiometabolic risk factors (on going---not yet implemented), etc). While brain charting prior efforts with simpler methods and smaller scope exist, the current study significantly advances the state of the art, in our opinion. Below is an excerpt from the introduction that somewhat summarizes these advances.

I hope that you will find the paper interesting for consideration by NM, or else you can give us suggestions for modifications before we submit to NM.

Your feedback is greatly appreciated!

Best
Christos

--paragraph---
The main contributions of NiChart relative to prior brain charting efforts lie in: a) using and making freely available current machine learning methods for image processing and ML model extraction, including deep learning models that perform anatomical parcellation in seconds as well as state of the art weakly supervised deep learning methods for dissecting heterogeneity of brain aging and of various diseases; b) making available respective normative statistical summarizations, pre-trained harmonization models and compatible ML models from a large and diverse pooled and harmonized dataset, and allowing user to harmonize their own data with NiChart; c) providing containerized state-of-the-art pre-processing pipelines for easy installation and complete reproducibility on resources ranging from a personal computer to a high performance computing cluster, as well as the easy to use NiChart web portal on the Amazon Web Services (AWS) cloud, which eliminates the need for any local installation (https://neuroimagingchart.com). Moreover, through preprocessing and harmonization tools, NiChart enables the growth of a community-driven arsenal of statistical and ML models, facilitating novel methodology dissemination and validation.