Sylvain Takerkart

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Guillaume Auzias

Researcher

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Research Engineer

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Engineer

Martin Szinte

Postdoc

Ruggero Basanisi

PhD Student

Etienne Combrisson

Postdoc

BrainHack 2020

On December 2-4,
INT did organize the second Brainhack Marseille,
as part of the Brainhack Global 2020

November 30th - December 13th

Fully virtual

Facts

- 51 registered attendees, 7 labs represented (INT, INS, LNC, LPL, Lyon, Neurospin..). + members of Brainhack Global (R.Toro, Katja, Remi Gau etc)
- The program did include 4 conferences in addition to hacking
- No training this year, requires volunteers/preparation and great open resources available online
- All participants had the opportunity to propose projects, new or already under development.
- 7 projects were proposed, with a short description, see the website

https://brainhack-marseille.github.io/

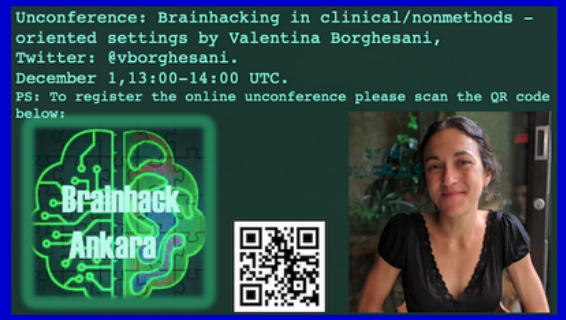
Go to the website and show

-The program

-Quick overview of the projects

https://brainhack-ankara.github.io/

All Times are UTC +3. To convert to your local time check here



December 1, 2020	
12:00-12:45	Opening Remarks by Brainhack Ankara Organization.
12:45-13:00	Break
13:00-15.00	Things I wished I knew when I starded coding (with Matlab).Instructor: Remi Gau, Postdoctoral Research Fellow at Crossmodal perception plasticity lab at the Université catholique de Louvain.
15:00-16:00	Project Pitches.
16:00-17.00	Unconference: Brainhacking in clinical/nonmethods - oriented settings. Instructor: Instructor: Valentina Borghesani, Postdoctoral Researcher at Psychology Department of the Université de Montreal.
December 2, 2020	
10:30-11:00	Unconference: Brainhack Proceedings.
11:00-11:50	Open Development Tools: an overview. Instructor: Stefano Moia
11:50-12:00	Break
12:00-14:00	Introduction to Python. Instructor Ömer Cengiz.
14:00-15:00	Introduction to Deep Learning. Instructor: Ugur Halıcı.
15:00-15:30	Break

https://brainhack.org/global2020/ https://brainhack.org/global2020/events/

Brainhack Global 2020

Aujourd'hui ◀ ▶ **mercredi, 2 décembre** ▾

mercredi, 2 décembre	
Brainhack Marburg	
Brainhack Avoca	
Brainhack Ankara	
Brainhack Marseille	
Brainhack Western-Ontario	
08:30	Brainhack Ankara Day2
jeudi, 3 décembre	
Brainhack Marburg	
Brainhack Avoca	
» 18:30	Brainhack Ankara
Brainhack Marseille	
Brainhack Western-Ontario	
08:00	Brainhack Ankara Day3
11:30	Brainhack Marseille - Unconference - Cyril Pernet
16:00	Brainhack Marseille - Unconference - Thomas Brochier & Julia Sprenger
vendredi, 4 décembre	
Brainhack Marburg	
Brainhack Marseille	
Brainhack Western-Ontario	
samedi, 5 décembre	
Brainhack Marburg	
dimanche, 6 décembre	
Brainhack Marburg	
Brainhak Princeton	
Brainhack Pittsburgh	
lundi, 7 décembre	

Événements affichés dans le fuseau horaire : Heure d'Europe centrale - Berlin

Organization

- 1 mattermost channel for all attendees
- 1 main zoom conf for all attendees (intro, warp-up etc)
- 1 (different) zoom for two conf that were broadcasted (shared) with Brainhack Global

- Each project leader was managing his project
  - 1 specific zoom link
  - 1 specific mattermost channel

- Discussions with other Brainhacks (Donostia, Ankara, Ontario) and Brainhack Global

remi-gau 7:40 PM
A short demo of Sourcery, a python tool that helps you write cleaner code, given at Brainhack Ankara:
https://www.youtube.com/watch?v=mPOHlkDS4xc
🚀 4

Fri, Dec 04, 2020

sylvain.takerkart 8:33 AM
@all Good morning everybody! Soooo, the program of the day: 1. happy hacking during the entire morning, 2. Guillaume Dumas' ur
about reproducibility from 2-3pm, 3. hacking from 3 to 4pm, 4. a newly-added 15mn presentation at 4pm about the history of brain
impact etc. (as currently being written up in a paper), followed up by the project wrap-up session, and 5. a virtual aperooooo!!!!!
🚀 3

System 9:43 AM
@rohit joined the channel.

dipankarb 1:47 PM
Hi @all, Todays unconf of G.Dumas at 2pm.

The main zoom link :
https://univ-amu-fr.zoom.us/j/96462219227?pwd=YXdycFB3c1VOT2NaQUVFUWlyVGFMUT09

Meeting ID: 91580293395
Password: MBH2020
🙌 1

System 3:35 PM
@brovelli joined the channel.

mszinte 4:04 PM
Presentation of the Brainhack paper is now !
https://univ-amu-fr.zoom.us/j/96462219227?pwd=YXdycFB3c1VOT2NaQUVFUWlyVGFMUT09
(edited)

guillaume_auzias 4:11 PM
@all, here is a pdf of the slides and links from Guillaume Dumas's unconference:
BrainHack Marseille 2020 - Reproduc...
PDF 9MB

jeremy.garcia 4:12 PM
Nice ,Thank you =)

eCOBIDAS: a webApp to that writes your methods section for you

by Rémi Gau

Description

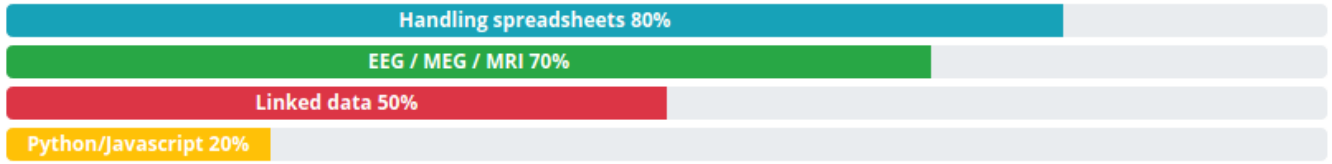
The main aim of this project is to **improve reporting methods and results in neuroimaging** (f/MRI, i/EEG, MEG, PET...) in order to increase transparency and reproducibility. We want to do this by developing a set webapps to run checklists based on best practices guidelines and recommendation of a field, that are both easy and practical to use, that provides a machine readable summary of an experiment and its analysis, and that can then automatically generate parts of the methods section. To get started you can explore the github page of the project and the retalive documentation.

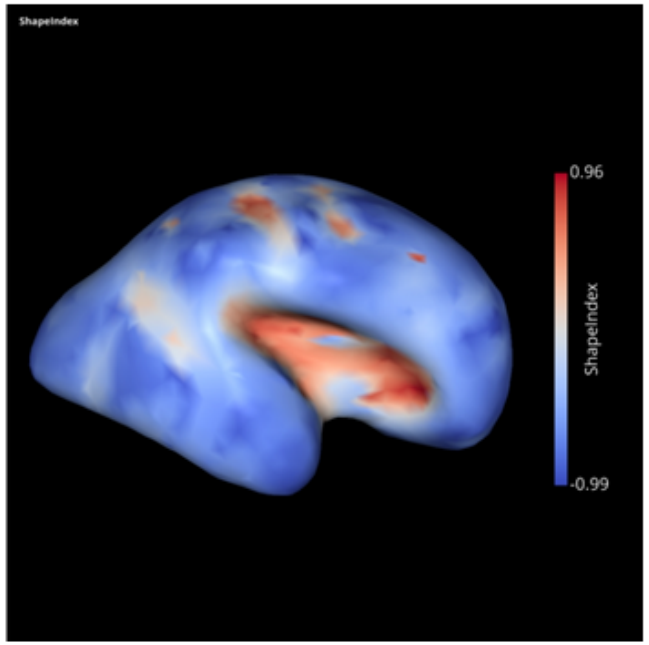
You can find several "good first issues" here but during this event I would like to focus on:

- Making sure the documenation is understandable and constitute good on-board and How-To materieal
- Create some prototype script / toy example that can take the output of the app and generate a method section

Required skills

The project has many moving parts so there is a certain level of flexibility in terms of skills needed.





Slam is an open source python package dedicated to the representation of neuroanatomical surfaces stemming from MRI data in the form of triangular meshes and to their processing and analysis. Main features include read/write gifti (and nifti) file format, geodesic distance computation, several implementations of graph Laplacian and Gradient, mesh surgery (boundary identification, large hole closing), several types of mapping between the mesh and a sphere, a disc...
Have a look at the examples on the documentation website.

During this brainhack, our objectives are:

- to add as a new feature the algorithms for computing surface profiling as described in Li, K., Guo, L., Li, G., Nie, J., Faraco, C., Cui, G., Zhao, Q., Miller, L.S. and Liu, T., 2010. Gyral folding pattern analysis via surface profiling. NeuroImage, 52(4), pp.1202-1214. https://doi.org/10.1016/j.neuroimage.2010.04.263
- to improve the documentation with new examples to enrich the gallery, which helps a lot potential new users
- to switch the example codes from python script to Jupiter notebooks
- to further improve code quality with new unitest and potential speed-up of specific pieces of code such as for instance the computation of the curvature
- to help potential users to get familiar with this python package

We are of course also open if new features are proposed from the contributors.

Required skills

Minimal skills in python coding and github are required, but various levels of expertise are welcome since some of our objectives can be addressed with limited coding effort such as augmenting the documentation.

Example : slam

Search or jump to… / Pull requests Issues Marketplace Explore

gauzias

Repositories 28 | Projects 1

bhg20-marseille-slam

Updated yesterday

6 To Do

- tutorial for beginers and potential users
  Added by gauzias
- **RF: update toward nibabel 2.1 syntax for io operations**
  slam#31 opened by alexpron
  enhancement good first issue
  brainhack-marseille-2020
- check install works for everyone
  Added by gauzias
- Use turbostat to measure the energy taken by each code
  Added by JulienLefevreMars
- conda packaging
  Added by gauzias
- CI for windows (azure)
  Added by gauzias

2 In Progress

- Example for surface profiling
  I will merge the PR and refactor a bit so that **@tianqi** can update his PR and benefit from the hinge surface generation
  Added by JulienLefevreMars
- **New Feature: surface profiling**
  slam#22 opened by alexpron
  enhancement
  brainhack-marseille-2020

6 Done

- tuto on pull request and issues
  Added by gauzias
- modify the readme so that contributors appear as in the repos from Remi Gau (eCOBIDAS)
  Added by gauzias
- **add contributors to the readme section**
  slam#29 opened by gauzias
- **reduce computing time of unitests**
  slam#30 opened by alexpron
  tests
  brainhack-marseille-2020
- **Examples have additionnal dependencies required**
  slam#21 opened by alexpron
  bug
  brainhack-marseille-2020

1 linked pull request

- **surface_profiling**
  slam#24 opened by tianqisong0117

Summary

- Number and the diversity of the projects, progress made by each one of them. It seems to be quite unique across overall brainhack events
- Diversity of people as it covered all scientific profiles (master students, doc, post-doc, engineers, researcher)
- All of the projects made some great improvements in various fields :
  - Software management, documentation and organization of future developments : like slam and macapype
  - Feedback from the users and community : eCOBIDAS and DIGlab
  - Coding and implementation improvements : FRITES, DASK and SNNs

Conclusions / perspectives

This event was composed of researchers and students coming from a diverse community focused on neuroscience. All of them were able to share solutions and knowledges about existing softwares (e.g data formats, pipelines, visualization tools) and thus avoid duplicated work.

Attendees were also able to take advantage of this event to learn the basics of programming. At the end, future collaborations are emerging from this cross-labs growing community.

-Long-term benefits are also expected (collaboration development, important positive communication for the lab)

Conclusions / perspectives

-Brainhack is an efficient way to move forward in -specific- projects

-To be reproduced (every year, twice a year), at INT or another lab in Marseille

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WHO WANTS TO BE INVOLVED NEXT YEAR???