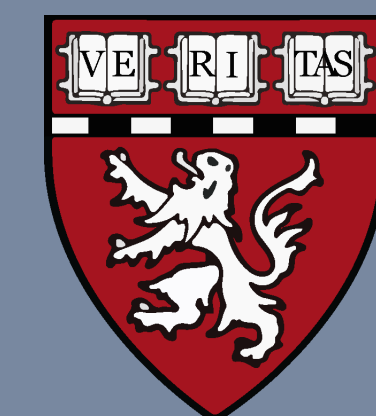


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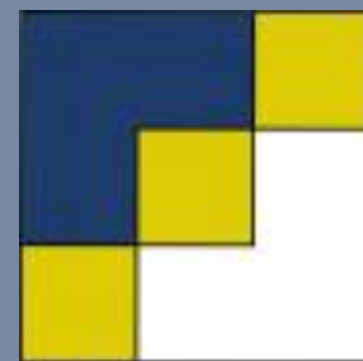
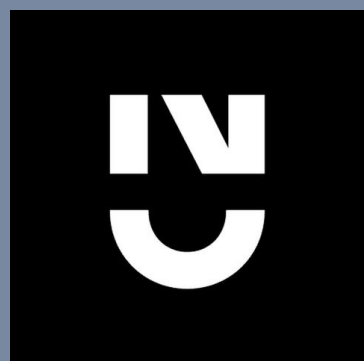
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Mon quotidien d'Ingé Stat CNRS

(au labo de maths Jean Leray de Nantes)

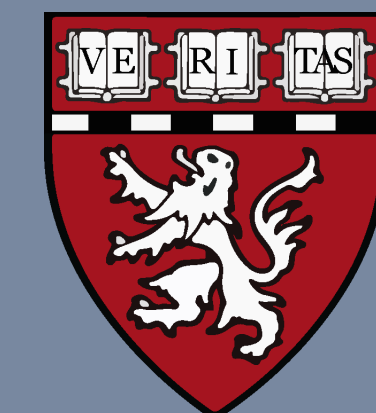


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Analyse du poste dans son contexte

Spécificité de l'IR/IE/AI

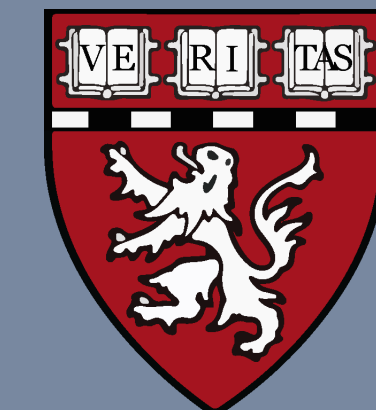
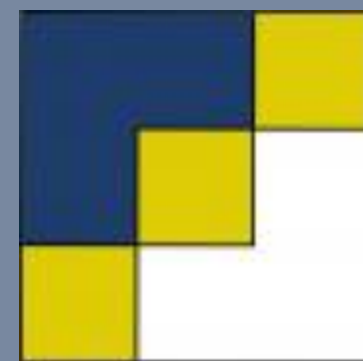
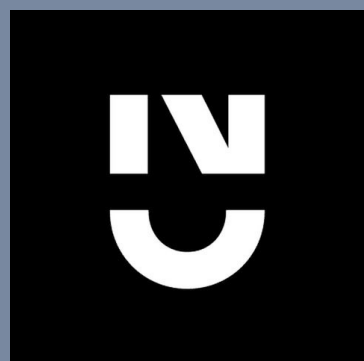
Etre sur beaucoup de projets en même temps

De ma (maigre) expérience (recruté en janvier 2019)

1. Pas de machine à manipuler ou d'expériences à mener : donc que peut-on demander à un ingé stats ?
2. Il faut a minima une journée complète sur un projet pour être efficace
3. Il faut satisfaire (faire avancer) tous les projets dans des délais raisonnables
4. Il y a parfois des urgences sur certains projets (gestion des priorités)
5. Le travail est réparti en 3 grandes catégories: collaboration scientifique, développement de code et formation/enseignement
6. Certains projets ont un "coût d'entrée" plus important que d'autres
7. Certains DU laissent la place à notre recherche "personnelle" (20% de mon temps) : c'est super mais c'est court !

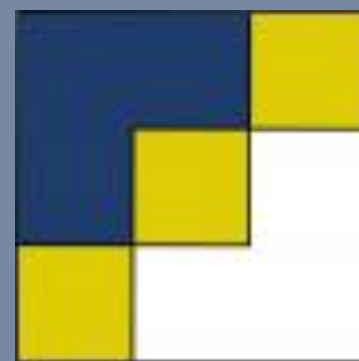
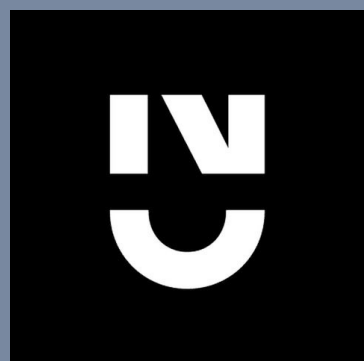
Consensus retenu

- 65% de mon temps pour le soutien aux autres membres **de l'équipe ALEA**
- 20% de mon temps pour ma recherche personnelle
- 15% de mon temps pour la formation / enseignement / valorisation logicielle **du LMJL**



Organisation du temps de travail

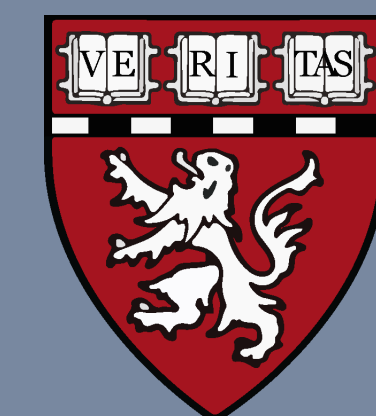
	Matin	Après-Midi
Lundi	eGait (Collab. Lise) [P: session thèse Klervi, gestion de projet, dev logiciel]	
Mardi		
Mercredi	PASTRAMI (Recherche perso + activités annexes) [TT: écriture articles, dev logiciel]	PASTRAMI (Recherche perso) [P: session thèse Marie]
Jeudi	Enseignement (Variable d'ajustement à partir de février)	TDA (Collab. Bertrand) [P: travail méthodo inférence avec Bertrand]
Vendredi	TDA (Collab. Bertrand) [TT: dev logiciel GUDHI/tdaverse/inference]	



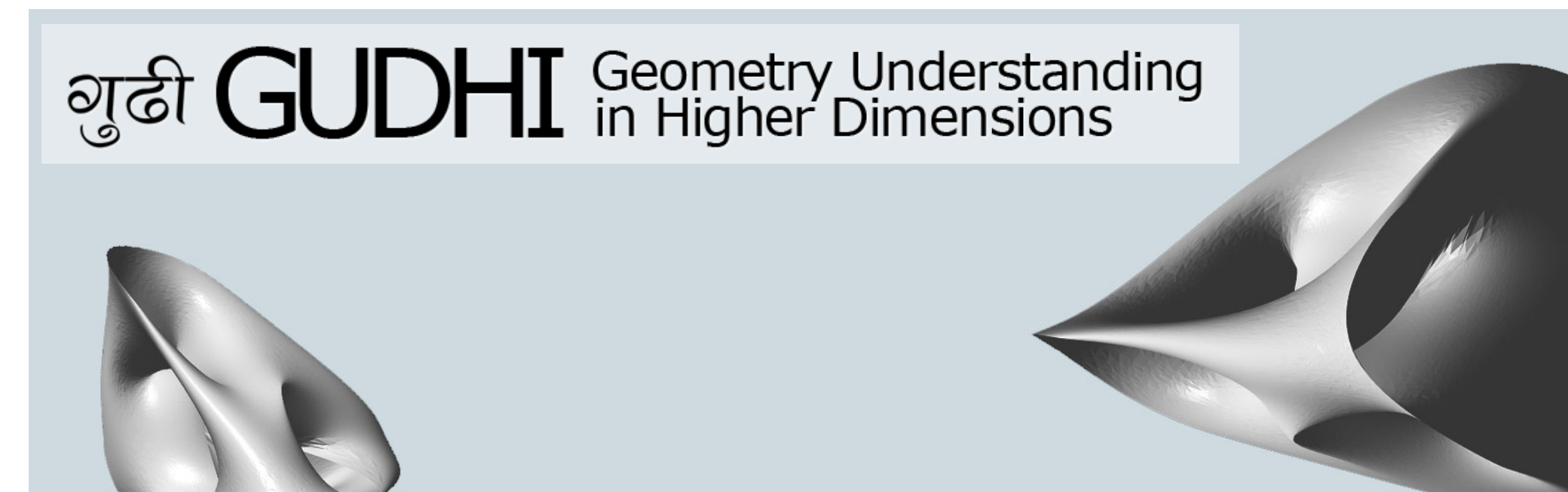
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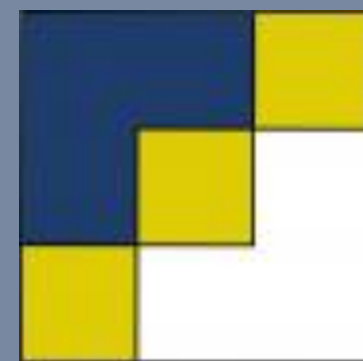
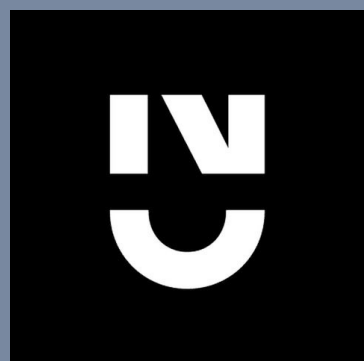
TDA (Support)



Overview

The goal of the **flipr** package is to provide a flexible framework for making inference via permutation. The idea is to promote the permutation framework as an incredibly well-suited tool for inference on complex data. You supply your data, as complex as it might be, in the form of lists in which each entry stores one data point in a representation that suits you and **flipr** takes care of the permutation magic and provides you with either point estimates or confidence regions or p -value of hypothesis tests. Permutation tests are especially appealing because they are exact no matter how small or big your sample sizes are. You can also use the so-called *non-parametric combination* approach in this setting to combine several statistics to better target the alternative hypothesis you are testing against. Asymptotic consistency is also guaranteed under mild conditions on the statistic you use. The **flipr** package provides a flexible permutation framework for making inference such as point estimation, confidence intervals or hypothesis testing, on any kind of data, be it univariate, multivariate, or more complex such as network-valued data, topological data, functional data or density-valued data.



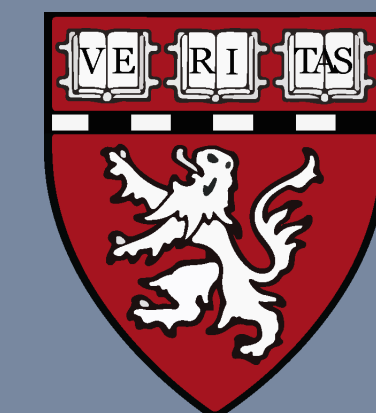


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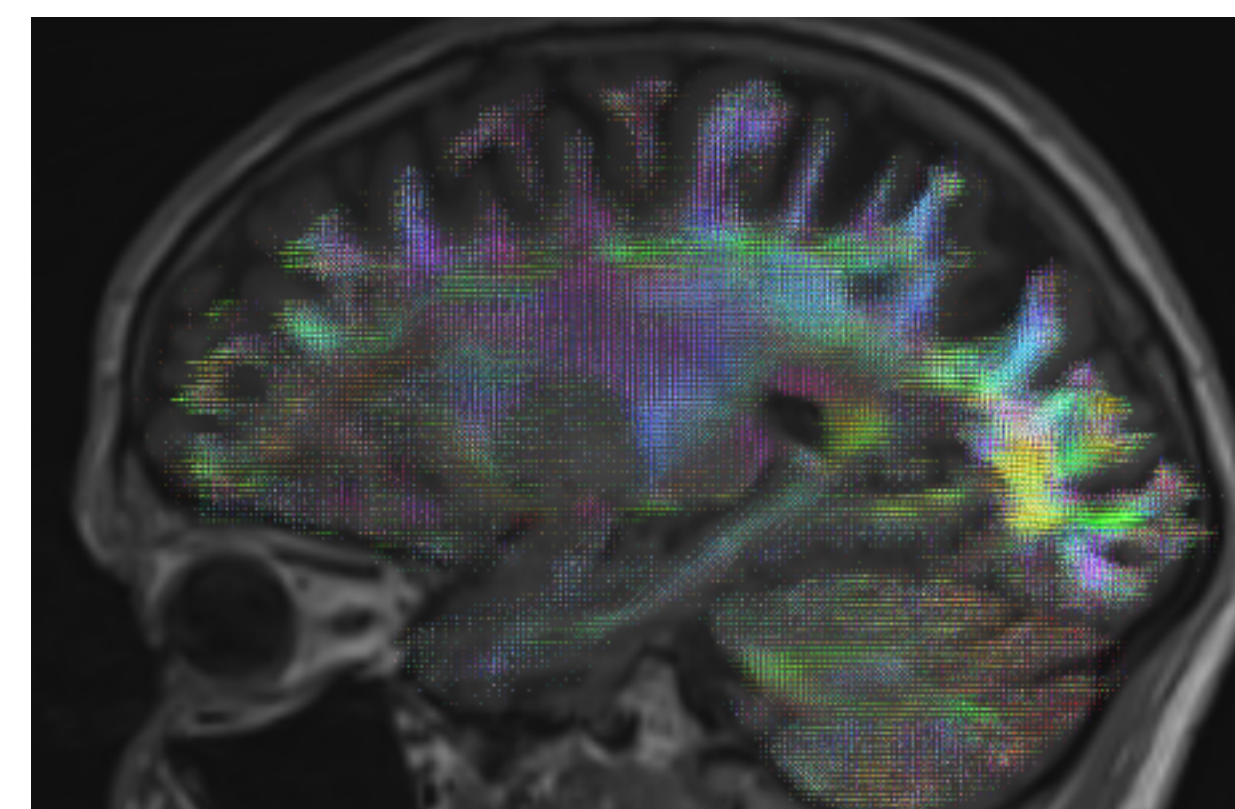
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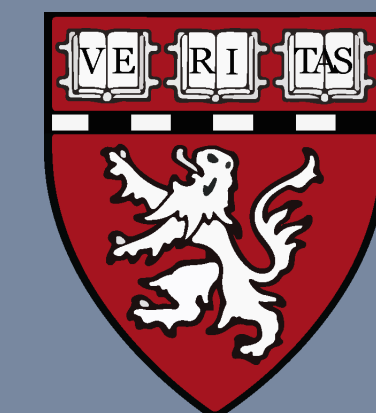
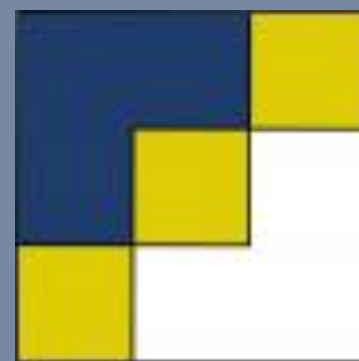
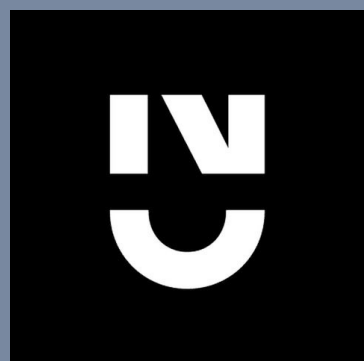


ANR PASTRAMI (Rech. Perso.)

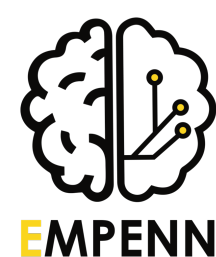
Patient-specific statistics for microstructure-augmented connectomics

- PI: Emmanuel Caruyer (INRIA Equipe-Projet Empenn)
- Scientific coordinator for LMJL
- Co-supervisor of Marie Poirier PhD
- Another PhD who should start in fall 2024
- Own research: functional data analysis, network-valued data analysis, statistical methods for populations of finite mixtures of densities



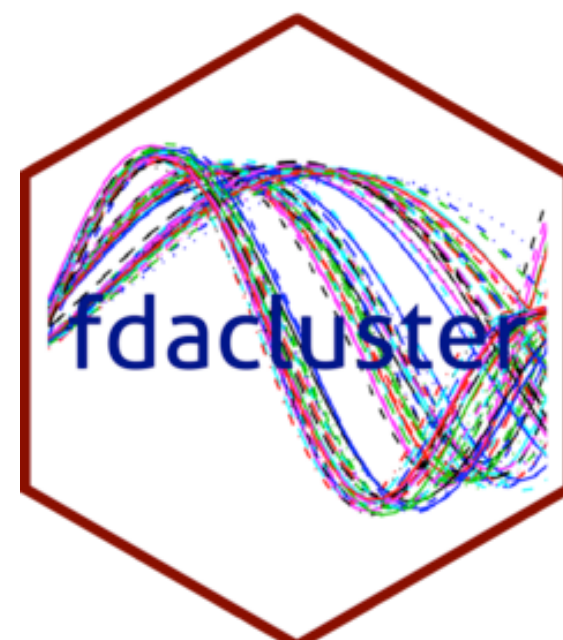


Software Development



Anima

Anima
(PASTRAMI)



fdacuster
(PASTRAMI)



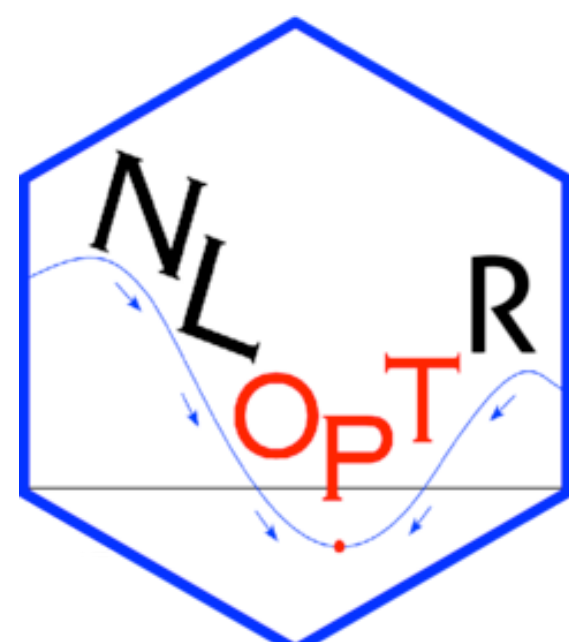
flipr
(TDA)



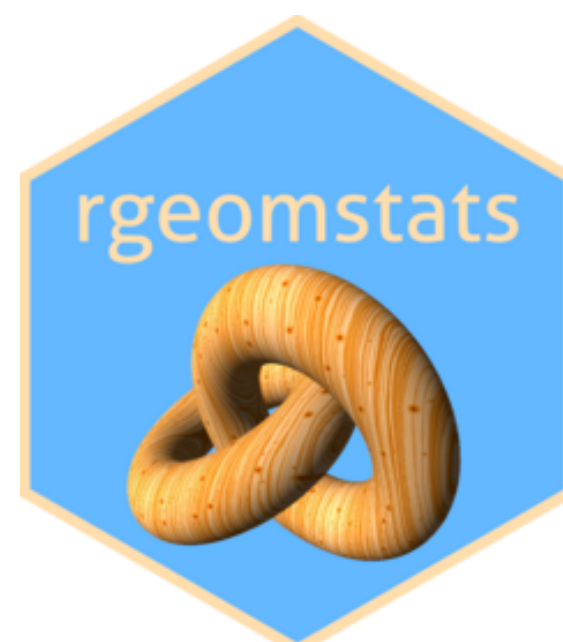
nevada
(PASTRAMI)

+ other packages without stickers:

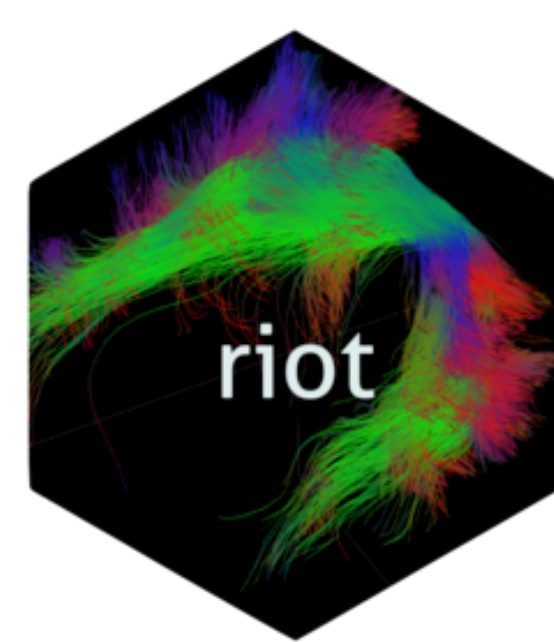
- fdatest (TDA)
- flipscalar (Maintenance)
- flipvector (Maintenance)
- rgudhi (TDA)
- rtists (PASTRAMI)
- squat (eGAIT)
- teachr (Teaching)



nloptr
(Maintenance)



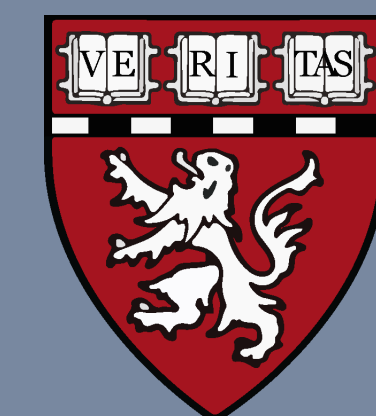
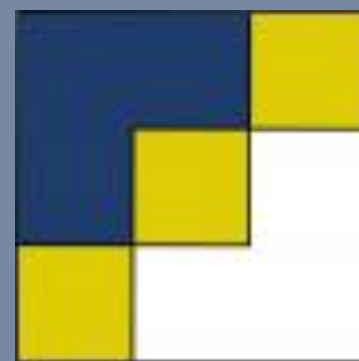
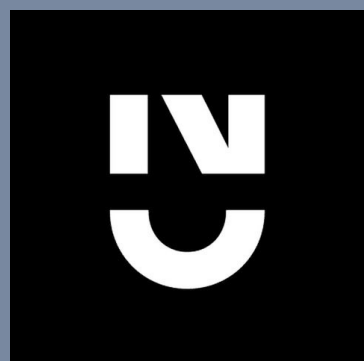
rgeomstats
(eGAIT)



riot
(PASTRAMI)



roahd
(Maintenance)



Software Name :

Summary: **A 0** **SO 0** **SM 0** **EM 0** **SDL 0** / **DA 0** **CD 0** **MS 0** **TPM 0**

Valorisation Logicielle

Concevoir et mettre en oeuvre une organisation de la production logicielle de manière à lui donner de la visibilité (GitHub, PLMLab).

S'assurer que la production logicielle du personnel non-permanent reste au laboratoire et soit maintenue.

Participation à des AMIs ou AAPs pour accompagner les projets de développement majeurs.

B.1 - Caractériser le logiciel

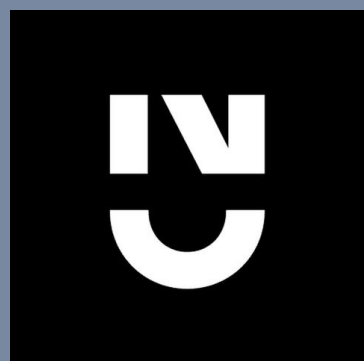
- Critères A (Audience)**
- A-1 Internal prototype.
 - A-2 Used by people in the team or close to the team.
 - A-3 Ambitious software, usable by people outside the team.
 - A-4 Large audience, used by people outside the team.
 - A-5 Wide audience, large user's community.
- Critères SO (Software originality)**
- SO-1 None.
 - SO-2 Minor contributions to existing software, reusing known ideas.
 - SO-3 Original software reusing known ideas and introducing new ideas.
 - SO-4 Original software implementing a fair number of original ideas.
- Critères SM Critères SO (Software maturity)**
- SM-1 Demos work, loose documentation.
 - SM-2 Basic usage works, terse documentation.
 - SM-3 Well-developed software, good documentation, reasonable software engineering.
 - SM-4 Major software project, strong software engineering.
 - SM-5 High-assurance software, certified by an evaluation agency or formally verified.
- Critères EM (Evolution and Maintenance)**
- EM-1 No real future plans.
 - EM-2 Basic maintenance to keep the software alive.
 - EM-3 Good quality middle-term maintenance.
 - EM-4 Well-defined and implemented plans for future maintenance and evolution.
- Critères SDL (Software distribution and licensing)**
- SDL-1 None.
 - SDL-2 Privately distributed within the close community.
 - SDL-3 Distributed to industrial partners in a contractual setting.
 - SDL-4 Public source or binary distribution on the Web.
 - SDL-5 External packaging and distribution, as part of a popular open source distribution or a commercially-distributed product.

B.2- Caractériser la contribution de l'auteur

- Design and Architecture (DA), Specify if you are :**
- DA-1 Not involved
 - DA-2 An occasional contributor
 - DA-3 A regular contributor
 - DA-4 A main contributor
- Coding and Debugging (CD), Specify if you are :**
- CD-1 Not involved
 - CD-2 An occasional contributor
 - CD-3 A regular contributor
 - CD-4 A main contributor
- Maintenance and Support (MS), Specify if you are :**
- MS-1 Not involved
 - MS-2 An occasional contributor
 - MS-3 A regular contributor
 - MS-4 A main contributor
- Team/Project Management (TPM), Specify if you are :**
- TPM-1 Not involved
 - TPM-2 An occasional contributor
 - TPM-3 A regular contributor
 - TPM-4 A main contributor

B.3 Complements d'information

Software's web site (if available):	
	<i>Domain addressed and precise technical goals</i>
Objective of the software	<i>Type of the software (autonomous, part of a library, part of a larger system)</i>
	<i>Performance goals, functionalities/algorithms, dissemination, etc</i>
Users community : type (research, education, commercial/industrial, large open source community, etc.), size, how the community is animated, etc.	
Your assessment of the software's impact in your research community and your user community.	
Description of the state of the art, placement of the software w.r.t. the competition.	
Size of the software (lines of code), languages used, size of the development team, development effort, list of patents and main publications related to the software.	
Your contribution to the software (as a team or as an individual).	
Any meaningful additional information	

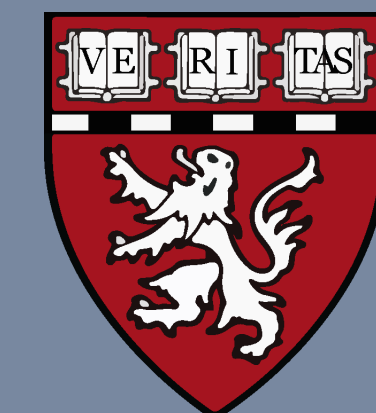


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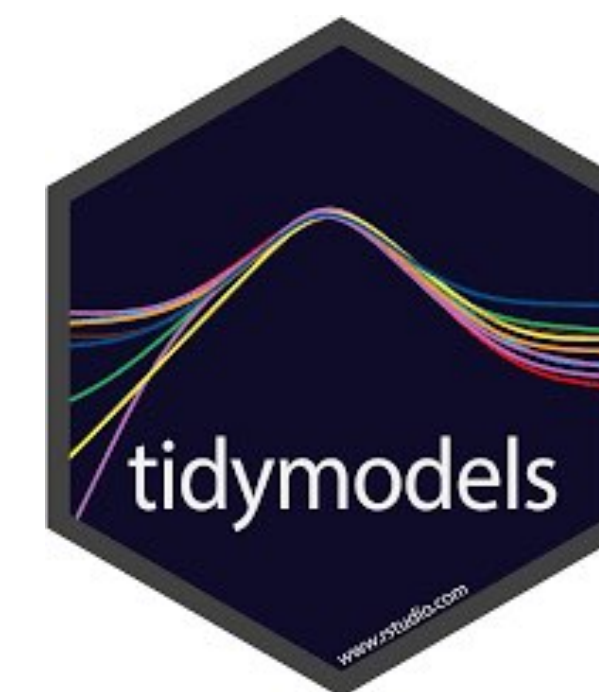
Activités de formation



Git for collaborative software development



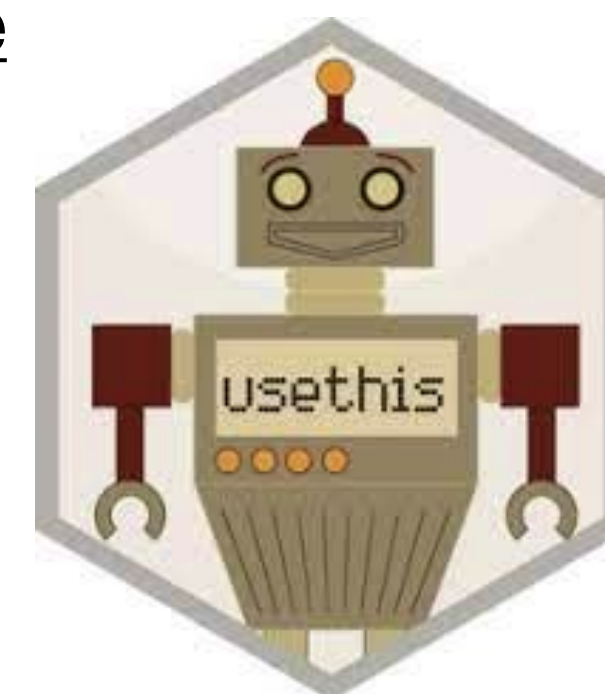
Data wrangling with the tidyverse



Machine learning with the tidymodels



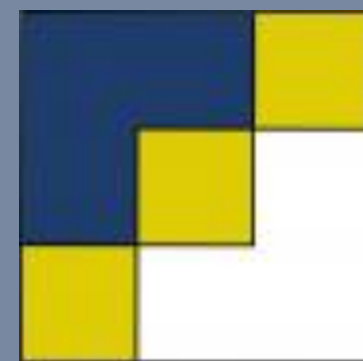
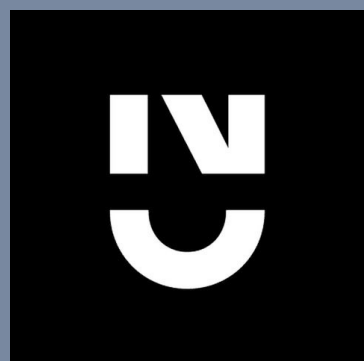
Optimising R code with Rcpp



Creating R packages



Parallel computing with R using the futureverse

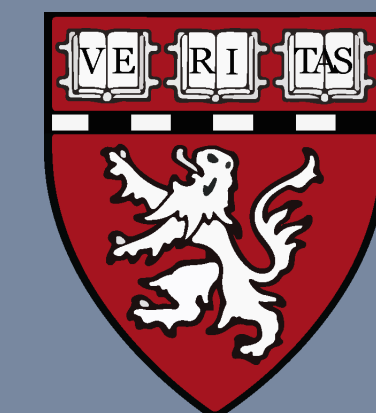


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Activités Annexes

Calcul scientifique

- Responsable pour le LMJL des interactions avec le cluster GLICID

Vie du labo

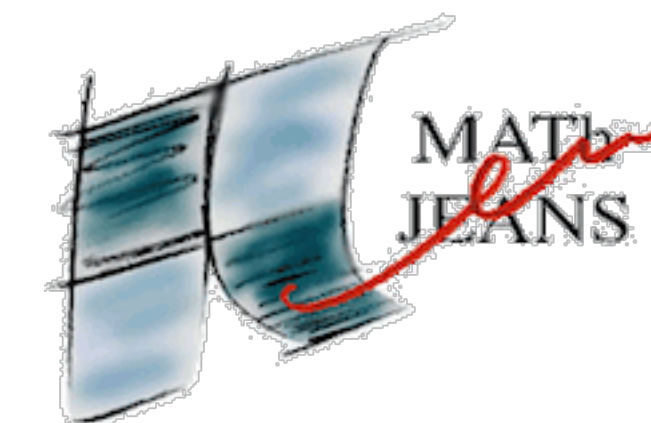
- Correspondant de l'Agence Lebesgue au LMJL
- Conseil de laboratoire
- Conseil de département
- Organisation du séminaire de math-appli (avec Claire B. et Nicolas P.)

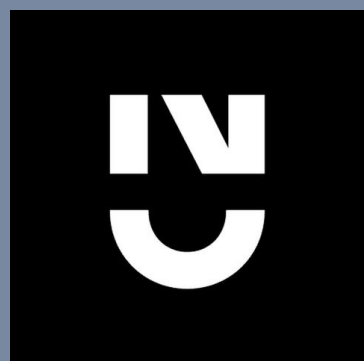
Math.EN.Jeans

- Bureau
- CA
- Coordination locale Nantes

Programme Arts & Sciences

- Jeux Sonores (collab. Sebastien Roux)

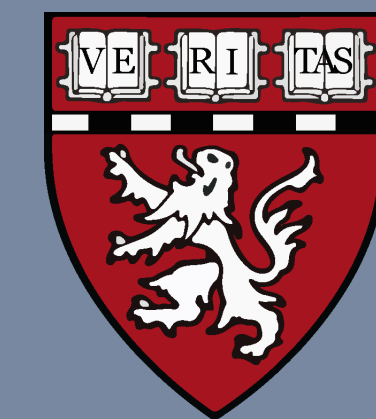




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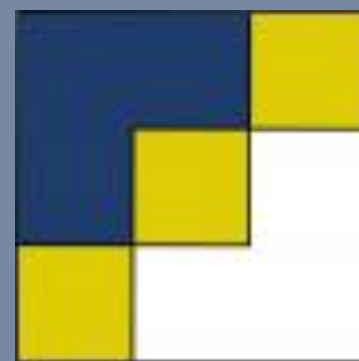
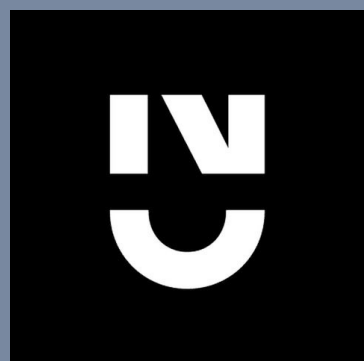


Utilisation des outils PLM - PLMLab

PLMLab: exclusivement des repos privés (tous mes repos publics sont sur GitHub)

Patented Softwares

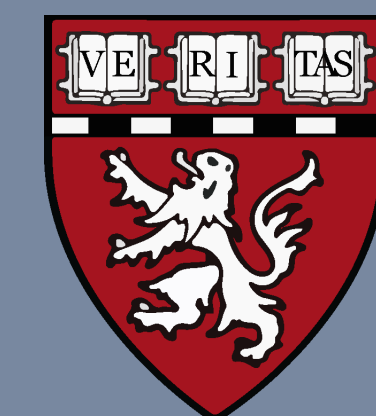
Web Applications (ShinyR)



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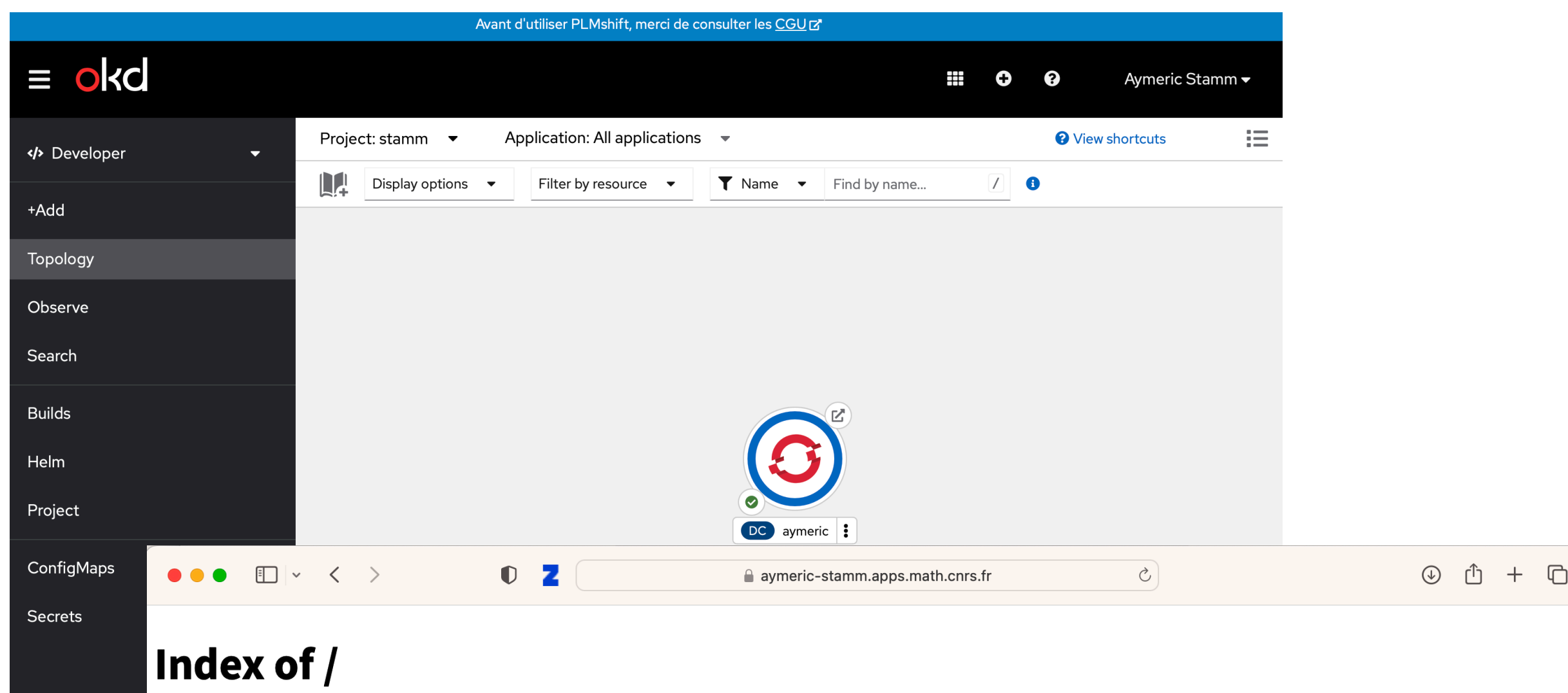


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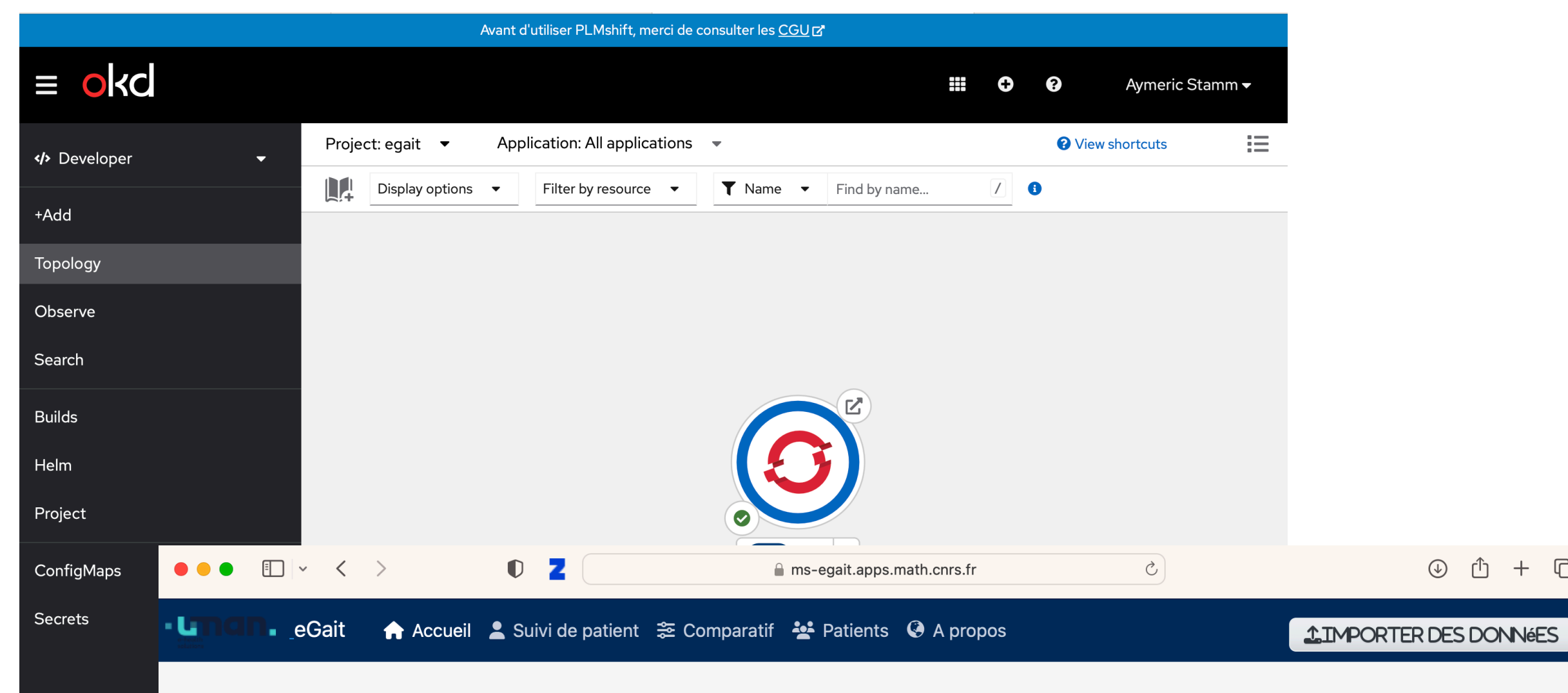


Utilisation des outils PLM - PLMShift

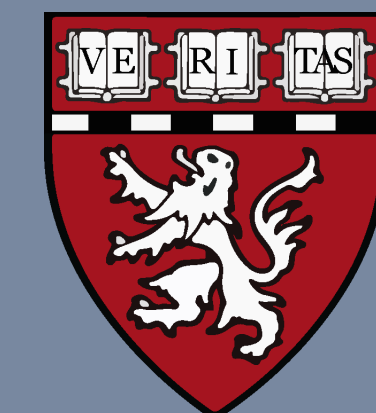
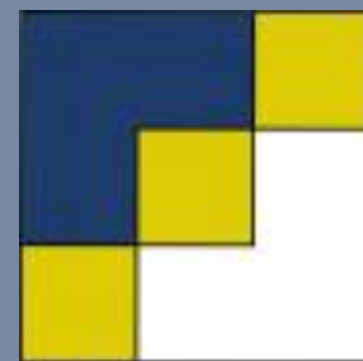
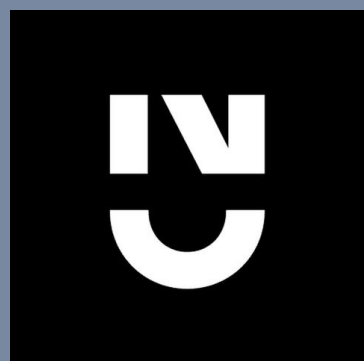
PLMShift: exclusivement pour le déploiement d'applications Web via l'instance ShinyR



SandBox with small standalone apps



Apps of the eGait project (one per pathology)



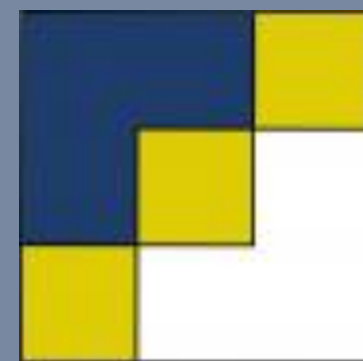
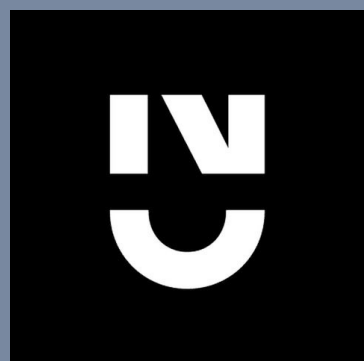
Proposition de projet : PLMcloud ?

The screenshot shows the Posit Cloud interface for a workspace named "Data Science With R - Winter 2020 / 01-Tidyverse". The console window displays the output of a "reinstall_packages.R" script, showing the successful installation of various R packages. The file explorer on the right shows a "project" folder containing files like ".Rhistory", "01-Introduction", "install_packages.R", and "project.Rproj".

```

reinstall_packages.R 2:57
ched in 0.37s]
- Installing shiny ... OK [installed binary and ca
ched in 1.2s]
- Installing tinytex ... OK [installed binary and ca
ched in 0.34s]
- Installing rmarkdown ... OK [installed binary and ca
ched in 0.92s]
- Installing renv ... OK [installed binary and ca
ched in 0.41s]
- Installing learnr ... OK [installed binary and ca
ched in 0.68s]
- Installing lubridate ... OK [installed binary and ca
ched in 0.7s]
- Installing modelr ... OK [installed binary and ca
ched in 0.56s]
- Installing progress ... OK [installed binary and ca
ched in 0.38s]
- Installing readxl ... OK [installed binary and ca
ched in 0.84s]
- Installing whisker ... OK [installed binary and ca
ched in 0.33s]
- Installing reprex ... OK [installed binary and ca
ched in 0.4s]
- Installing selectr ... OK [installed binary and ca
ched in 0.36s]
- Installing xml2 ... OK [installed binary and ca
ched in 0.41s]
- Installing rvest ... OK [installed binary and ca
ched in 0.46s]
- Installing tidyverse ... OK [installed binary and ca
ched in 1.1s]
The following loaded package(s) have been updated:
- renv
Restart your R session to use the new versions.
-- Complete Package Re-install --
Success
Cleaning up...
  
```

Name	Size	Modified
..		
.Rhistory	0 B	Dec 4, 2020, 10:57 AM
01-Introduction		
install_packages.R	87 B	Dec 4, 2020, 10:59 AM
project.Rproj	205 B	Nov 16, 2023, 1:04 PM

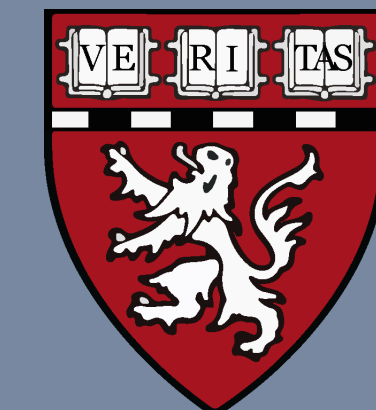


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Merci pour votre attention