PROJET ANALYSR

AnalysR

Team design and development of a request language for health data in partnership with CERIM (Research center in Medical Informatics of Lille) and CRIStAL (Research center in Computer Science of Lille).

WHAT IS ANALYSR ?

→ REQUEST LANGUAGE

A query language seems to be a basic thing especially when you know the existence of SQL or GraphQL. However, these languages are not suitable for the health domain. Our language is created to be used by biostatisticians and can be integrated inside an R code.

→ TIME DEPENDENCY

The temporal aspect of medical data is generally ignored by people not working in the field. However, they are of decisive importance in medical diagnosis and prognosis. This is the main innovation of this query language.

→ 5-TABLE DATA MODEL

The data model divided into 3 tables with temporal data (*measures*, *events*, *periods*) allows to take into account this temporal aspect and to treat it efficiently. The *stat_units* and *description* tables allow us to be agile.

→ DATA IMPUTATION AND AGGREGATION

Missing data is a difficult issue to deal with in data analysis. This is why we have added a data aggregation and imputation system.

→ METAPROGRAMMING

Metaprogramming is allowed by R programming language. It gives us the possibility to manipulate elements of the language to make it more enjoyable. It is an additional level of abstraction.
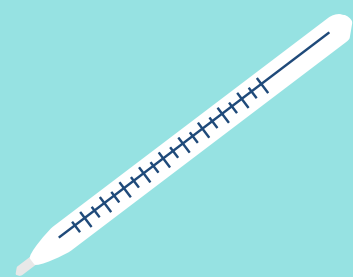
WHAT HAVE I LEARNED ?

Cédric JUNG

I was the lead developer of a group of twelve engineering students. Our goal was to create a query language for time-depending data in **R**.

My responsibility was the **good integration of the different components of the query language**. In particular, I had to make decisive technical decisions for the group.

I master all the technical skills required to create the project: Metaprogramming was an important part of it.

This project activity implies also a number of interpersonal skills such as **teamwork**, **leadership**, **project management** and **ability to work to tight deadlines**.

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