

Datawarehousing para datos genéticos, socioeconómicos y fenotípicos, con visualización 3D

SciPy 2018

Luciano Serruya Aloisi
Pablo Toledo Margalef

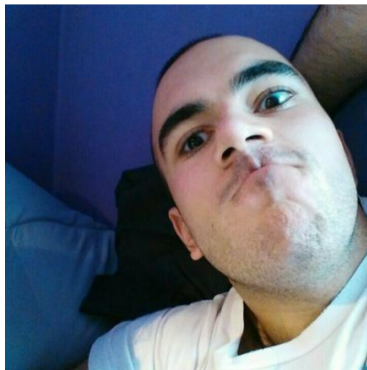
Universidad Nacional de la Patagonia San Juan Bosco

August 29, 2018

Roadmap

- ✓ Introduction 🙌
- ✓ A little bit of software engineering 👨‍💻👩‍💻
 - ▶ What we did
 - ▶ Why we did it that way
 - ▶ How we did it
- ✓ Demo time 😎🚀🔥
- ✓ Conclusions 🤔
- ✓ The end 🙏

whoami



Linux, Python, and Javascript



@LucianoSerruya



@LucianoFromTrelew



Linux and Python. FP enthusiast



@T_Papablo



@PaPablo

Both students at **UNPSJB, Trelew**

Getting in context

- ▶ **IPCSH-CONICET** studies how traditions, manners, and ancestry heritage relate themselves with medical interest physical variables.
- ▶ **RAICES Project (IPCSH-CONICET)** aims to build a Patagonian *biobank* (a genetic data bank)
- ▶ It is intended to help futures applications and design of public health politcs

Getting in context (cont.)

- ▶ RAICES Project sampling consists of a poll made to the volunteers (people who have been born in Argentina) and others several different exams
- ▶ These polls were (and still are) completed via a Google Form 🗳️ and then exported to a xls (Excel file)
- ▶ The exams also output their own files

CENPAT Internship

- ▶ This work comes out as a internship at CENPAT-CONICET
- ▶ Researchers of the project needed a software to handle all that data and files 😱
- ▶ That is where we come on in! To develop a datawarehouse and a web application to fulfill their need

Design decisions

- ▶ Web application
- ▶ REST Architecture 
- ▶ noSQL Database (Mongo)

Development

- ▶ Datawarehouse (Python 🐍 + Mongo = Mongoengine FTW)
- ▶ Pandas 🐼 for data processing
- ▶ DRF + Vue.js
- ▶ THREE.js 👁
- ▶ Bokeh 📊

IT'S DEMO TIME

Conclusions & Resolutions

- ▶ You will have to integrate your frontend application with your API sooner or later 🙌
 - ▶ Decoupled architectures generates **coupling** if there is a **lack of communication** between both development teams 🐒
- ▶ Working with files and REST it is not the happiest thing to do (it was not for us at least)

Conclusions & Resolutions (cont.)

- ▶ If you get to work with 3D visualization, keep an eye on the following
 - ▶ Size and scale of your mesh
 - ▶ Camera and mesh position and angle
 - ▶ **Lighting** (if you are working with textures also)

I would like to know some more about it, please



- ▶ RAICES Project - https://twitter.com/raices_proyecto
- ▶ IPCSH - <https://ipcsh.conicet.gov.ar/>
- ▶ CENPAT - <http://www.cenpat-conicet.gob.ar/>

I listen to your questions 🧐

The end 🙇

- ▶ ¡Muchas gracias!
- ▶ ¡Muito obrigado!
- ▶ Thank you very much!