GIS for Epidemiology

Day 2 of Geospatial Technology for Public Health Policy Workshop *May 27–29, 2024 — GISE Hub, IIT Bombay@Central University Gujarat (CUG), Gandhinagar*

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Welcome

- Welcome to the Julia workshop for Data Science!
- The goal for the workshop is to highlight the main features that make Julia an attractive option for data science programmers
- The workshop is intended for any data scientist with experience in R and/or python who is interested in learning the attractive features of Julia for Data Science. No knowledge of Julia is required.
- Workshop materials in the github repository julia-workshop

Learning Objectives for Tutorial

At the end of the tutorial, participants will be able to:

- Identify the main features that make Julia an attractive language for Data Science
- Set up a Julia environment to run their data analysis
- Efficiently handle datasets (even across different languages) through Tables.jl and Arrow.jl
- Fit (generalized) linear mixed models with MixedModels.jl
- Communicate across languages (Julia, R, python)

Intended audience and level: The tutorial is intended for any data scientist with experience in R and/or python who is interested in learning the attractive features of Julia for Data Science. No knowledge of Julia is required.

```
Sys.getenv("MY_USERNAME")
```

```
[1] "thisismyusername"
```

This is some new text

```
Sys.getenv("MY_PASSWORD")
```

```
[1] "thisismypassword"
```

Schedule

Time	Topic	Presenter
11:00 - 11:30	Session 1: Get Started with Julia	Claudia Solis-Lemus
11:30 - 12:30	Session 2a: Data Tables and Arrow files	Douglas Bates
12:30 - 1:00	Session 2b: Interval Overlap	Douglas Bates
1:00 - 2:00	Lunch break	
2:00 - 2:30	Session 3a: Linear Mixed-effects Models	Douglas Bates
2:20 - 3:00	Session 3b: Generalized Linear Mixed Models	Douglas Bates
3:00 - 4:00	Session 4: Hands-on exercise	Sam Ozminkowski and Bella Wu
4:00 - 4:15	Coffee break	
4:15 - 5:00	Presentation of selected participants' scripts and Q&A	
5:00 - 5:30	Session 5: Other important Data Science tools	Claudia Solis-Lemus
5:30 - 6:00	Session 6: Conclusions and questions	Claudia Solis-Lemus

In preparation for the workshop

Participants are required to follow the next steps before the day of the workshop:

1. Git clone the workshop repository: `git clone https://github.com/crsl4/julia-workshop.git`
2. Install Julia. The recommended option is to use JuliaUp:

- Windows: `winget install julia -s msstore`
- Mac and Linux: `curl -fsSL https://install.julialang.org | sh`
- Homebrew users: `brew install juliaup`

After JuliaUp is installed, you can install different Julia versions with:

```
juliaup add release  ## installs release version
juliaup add rc       ## installs release candidate version
juliaup st           ## status of julia versions installed
juliaup default rc   ## make release candidate version the default
```

3. Choose a dataset along with a script to analyze it written in another language (R or python) as we will spend part of the workshop translating participants' scripts to Julia.

Adding new image