Skolkovo Institute of Science and Technology
Center for Energy Science and Technology

Julia Programming Language

Aleksandr Lukashevich
aleksandr.lukashevich@skoltech.ru

October 29 2021

Table of Contents

Introduction
- Communication
- What is Julia

Installation
- Jupyter + Julia
- Install Julia
- Install Jupyter
- Install IJulia

The journey begins

How do we
Communicate?

- Canvas
- Telegram
- Any question – just text me (@lukashsasha at Telegram)
- `https://github.com/vjugor1/FPS2021`
- 5 Homeworks
- Deadlines are hard – **NO DEADLINE EXTENSIONS** *(Except for Prof. Ouerdane's exams)*
- Please turn on your web cameras!

What is Julia
Why to use it?

- Julia is OpenSource
- Julia is a Scientific Oriented Programming Language (like Python, MATLAB)
- Julia is about performance
- Julia is a relatively new languange (first release in 2012)

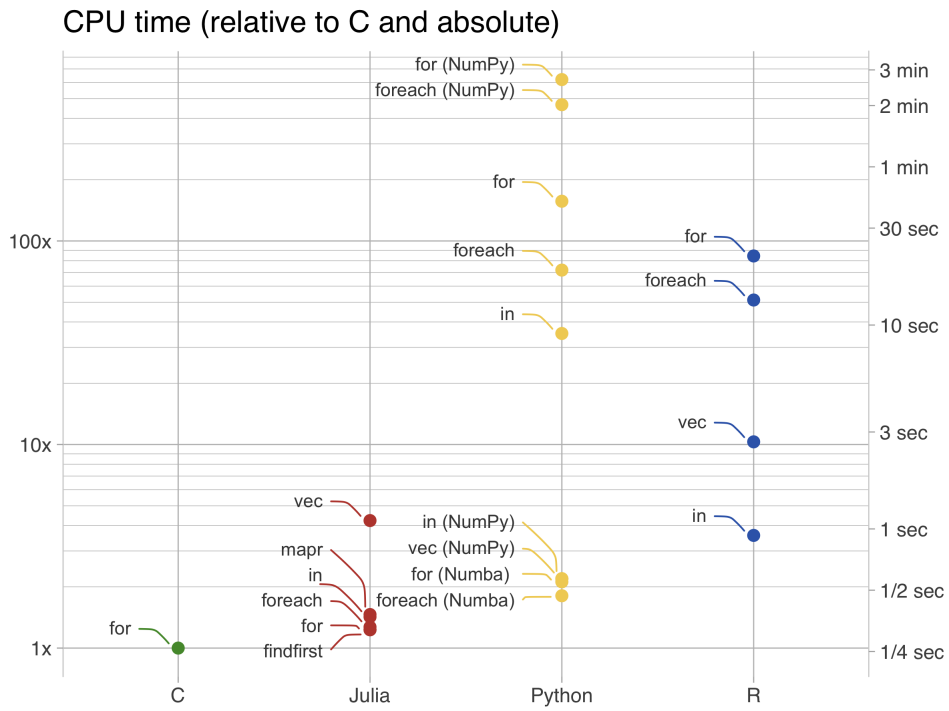


Figure: Julia v.s. C, Python and R

Table of Contents

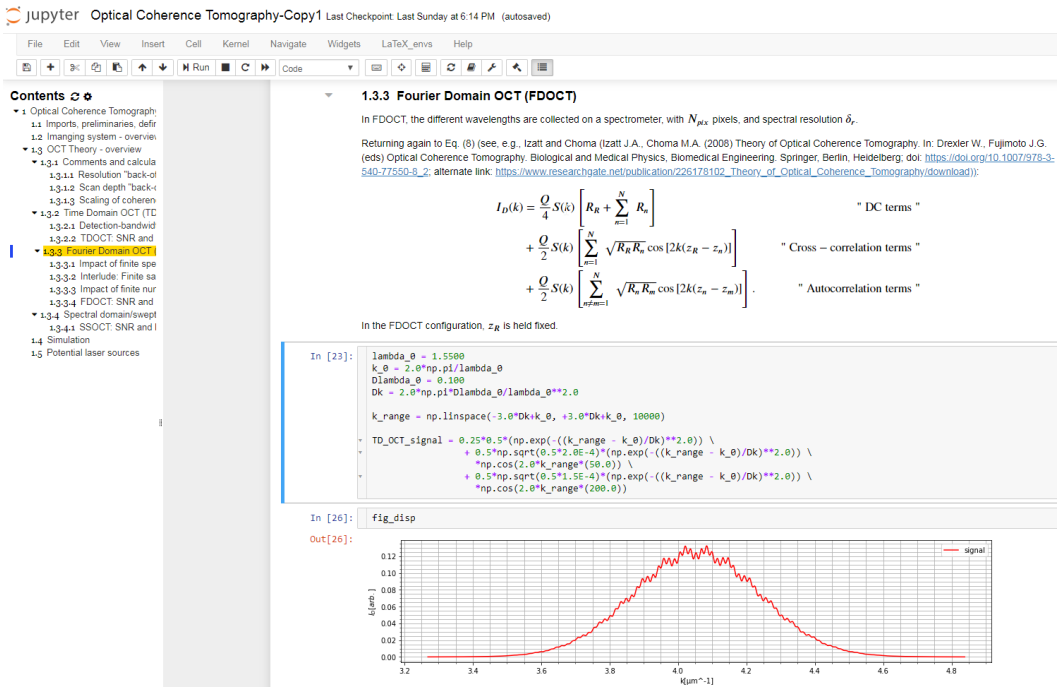
Introduction
- Communication
- What is Julia

Installation
- Jupyter + Julia
- Install Julia
- Install Jupyter
- Install IJulia

The journey begins

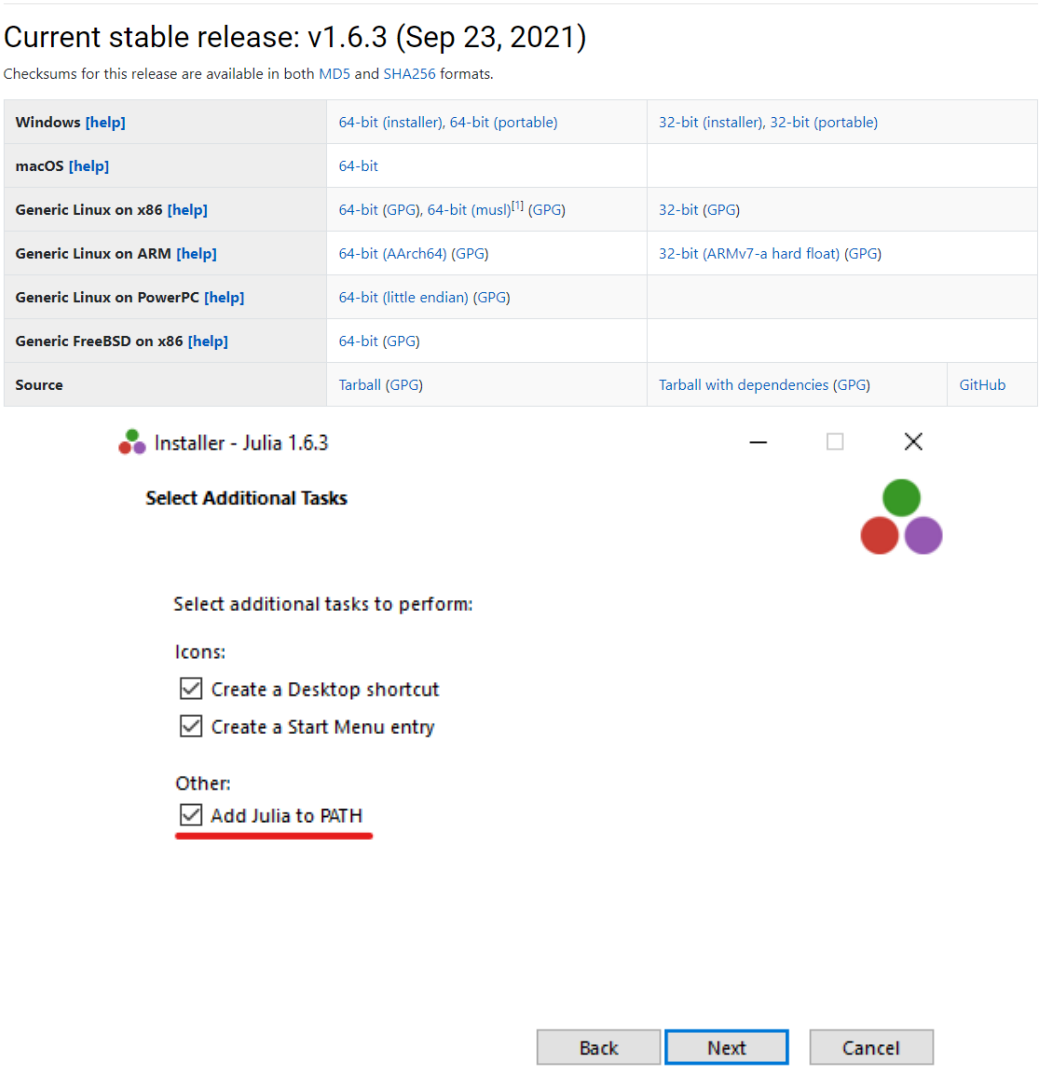
Jupyter
Julia

- Highly interactive IDE (Integrated Development Environment)
- Convenient for simple (and not very) experiments
- Make notes, code, figures in one place



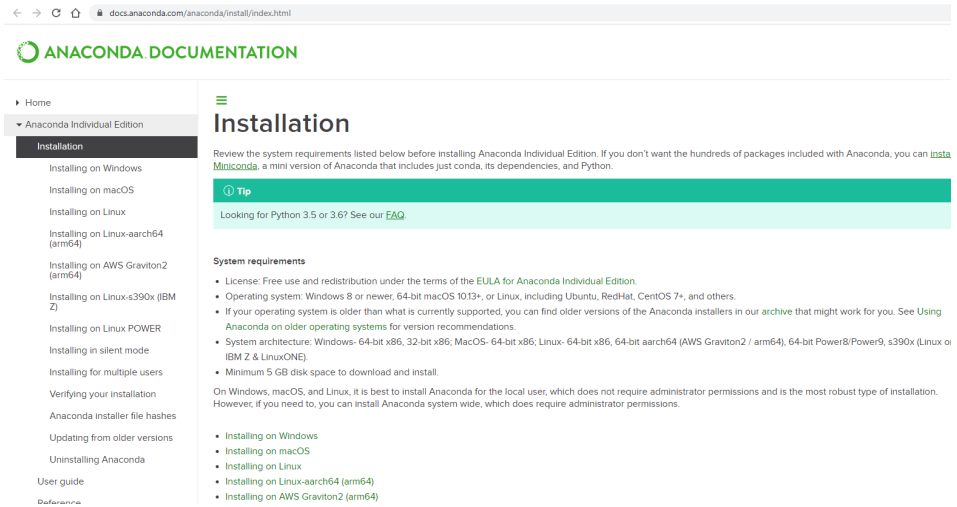
Julia
Installation

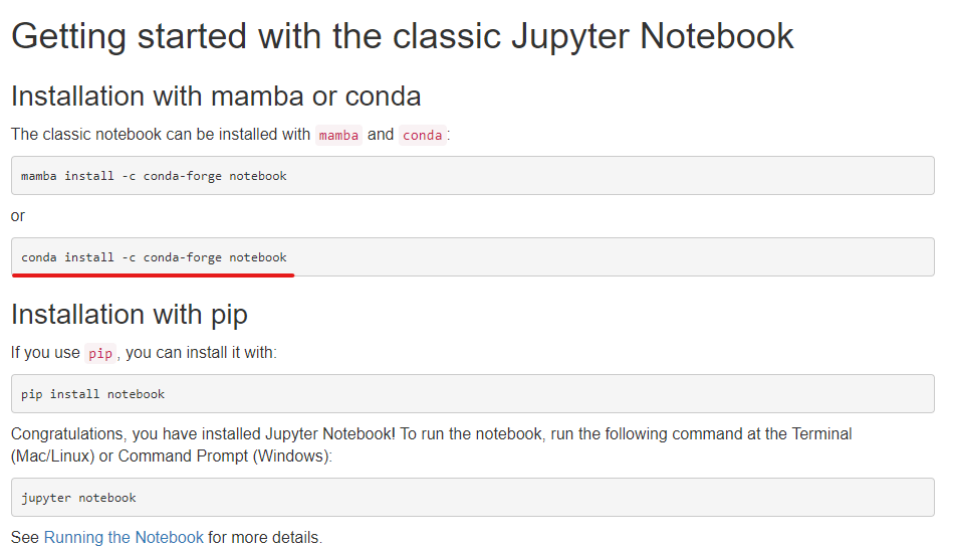
- `https://julialang.org/downloads/`
- Choose your system
- Install, Add Julia to PATH



Jyputer
Anaconda

- Install Anaconda `https://docs.anaconda.com/anaconda/install/index.html`
- Open cmd (Windows) or terminal (≈ Linux)
- Install Jupyter `https://jupyter.org/install`





Open Julia via cmd (Windows) or terminal (≈ Linux)

```
$ julia
               _
   _       _ _(_)_     |  Documentation: https://docs.julialang.org
  (_)     | (_) (_)    |
   _ _   _| |_  __ _   |  Type "?" for help, "]?" for Pkg help.
  | | | | | | |/ _` |  |
  | | |_| | | | (_| |  |  Version 1.6.3 (2021-09-23)
 _/ |\__'_|_|_|\__'_|  |  Official https://julialang.org/ release
|__/                   |

julia> using Pkg

julia> Pkg.add("IJulia")
    Updating registry at `C:\Users\user\.julia\registries\General`
    Updating git-repo `https://github.com/JuliaRegistries/General.git`
   Resolving package versions...
  No Changes to `C:\Users\user\.julia\environments\v1.6\Project.toml`
  No Changes to `C:\Users\user\.julia\environments\v1.6\Manifest.toml`

julia> Pkg.build("IJulia")
    Building Conda → `C:\Users\user\.julia\scratchspaces\44cfe95a-1eb2-52ea-b67
2-e2afdf69b78f\299304989a5e6473d985212c28928899c74e9421\build.log`
    Building IJulia → `C:\Users\user\.julia\scratchspaces\44cfe95a-1eb2-52ea-b67
```

Lets get
Into it

`https://github.com/vjugor1/FPS2021`

- Open cmd (Windows) or terminal ($\approx$ Linux)
- Type `jupyter notebook`