

# Julia Resources

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## Everything from Today, Including This Doc

<https://www.github.com/nickeubank/JuliaOverview>

## Installation / Getting Julia

- You can get Julia at [www.julialang.org/downloads](http://www.julialang.org/downloads).
- Interactive Development Environment: the most popular IDE is called Juno, and is provided through that Atom text editor by installing the `uber-juno` package. Note requires prior install of Julia from [www.julialang.org/downloads](http://www.julialang.org/downloads). Detailed instructions: <https://github.com/JunoLab/uber-juno/blob/master/setup.md>

## Forums / Where to Get Help

- Place for questions: [discourse.julialang.org](http://discourse.julialang.org)
- Where to subscribe for news on 1.0 releases: <https://discourse.julialang.org/c/announce>

## Tutorials

- Great tutorials on [www.juliabox.com](http://www.juliabox.com). Just log in and go to Tutorials/Intro-To-Julia.
- For 2 hour video of Julia Computing instructor walking through these tutorials, go to <https://julialang.org/learning/> and select *Intro to Julia*.

## Cheat Sheets

- All the important Julia syntax: <https://juliadocs.github.io/Julia-Cheat-Sheet/>
- Side-by-side Julia, Python, Matlab syntax comparisons: <https://cheatsheets.quantecon.org/>

## Julia on ACCRE

- Julia example scripts and installation: <https://github.com/accre/SLURM/tree/master/julia-job>

## Commonly used / well-supported packages

The Julia package community has developed into a set of families (e.g. JuliaStats, JuliaPlots, JuliaData, etc.). In general, the best packages are those found under one of these families (good packages created outside a family tend to get integrated). Here are some big ones:

- **DataFrames.jl**: OK, this is a package not a family (the family is JuliaData), but it's probably the one you'll use most. It's basically `data.frames` from R – it allows for tables whose columns are of different types. Details at <http://juliadata.github.io/DataFrames.jl/stable/>.
  - Note DataFrames is currently a little slow with missing data – this is one of the things the compiler update coming in 0.7 is meant to fix.
  - The missing data type is currently a stand-alone library (**Missings.jl**), but it's getting integrated into the base library in 0.7.
  - JuliaData also manages **CSV.jl**, **Feather.jl** for reading csvs and feather datasets in Julia as DataFrames.
- **JuliaPlots**: Manages the **Plot.jl** library, which provides a unified front end for plotting. It has one consistent interface, but can be used with lots of different back-ends, including `pyplot`, `plot.ly`, and `GR`. Details at <http://docs.juliaplots.org>.
- **JuliaIO**: manages most I/O libraries except for the two libraries in JuliaData noted above (**CSV.jl** and **Feather.jl**), including **HDF5.jl**, **JLD.jl** (for saving Julia objects as binaries), and **JSON.jl**.
- **JuliaOpt**: set of packages for numerical optimization. <https://www.juliaopt.org/>
- **JuliaStats**: Family of packages that implement core statistics functionality (<https://github.com/JuliaStats/>). **Distributions.jl** for random number generators

from lots of distributions, `StatsBase.jl` for basic (mostly-univariate) statistics, `GLM.jl` for linear models, and `MLBase.jl` for machine learning.

- JuliaGraphs: `LightGraphs.jl` for lightweight graphs, `MetaGraphs.jl` for graphs with node and edge attributes.

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