

# PackageEcosystem

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## 1 Overview of the Package Ecosystem

## 2 Good Packages to Know

## 3 Interop

### 3.0.1 ccall

While not technically a package because it's built into Julia, `ccall` is very important to know. The documentation page for `ccall` is: <http://docs.julialang.org/en/release-0.4/manual/calling-c-and-fortran-code/>. I wrote a tutorial for using `ccall`: <http://www.stochasticlifestyle.com/using-julias-c-interface-utilize-c-libraries/>

**Xeon Phi** Note that you can use `ccall` to control Xeon Phi acceleration cards: <http://www.stochasticlifestyle.com/interfacing-xeon-phi-via-julia/>

### 3.0.2 Cxx.jl

### 3.0.3 RCall

### 3.0.4 PyCall

### 3.0.5 MATLAB.jl

### 3.0.6 CUDArt.jl

<http://www.stochasticlifestyle.com/julia-on-the-hpc-with-gpus/>  
<http://www.stochasticlifestyle.com/multiple-gpu-on-the-hpc-with-julia/>

## 4 Plotting

Visualizations are provided by external packages. The standard package for plotting is `Plots.jl`.

## 5 Statistics

Statistical libraries in Julia are curated by JuliaStats. Their website can be found here: <http://juliastats.github.io/> (old). Some packages of note are:

5.0.7 DataArrays.jl

5.0.8 GLM.jl

5.0.9 RDatasets.jl

5.0.10 StatPlots.jl

5.0.11 DataFrames.jl

5.0.12 Distributions.jl

5.0.13 DataFramesMeta.jl

5.0.14 HypothesisTests.jl

## 6 Differential Equations

6.0.15 DifferentialEquations.jl

6.0.16 ParameterizedFunctions.jl

## 7 Optimization

7.0.17 JuMP

7.0.18 Optim.jl

## 8 Misc

8.0.19 ForwardDiff.jl

8.0.20 JLD.jl

8.0.21 IterativeSolvers.jl