

Julia 0.5

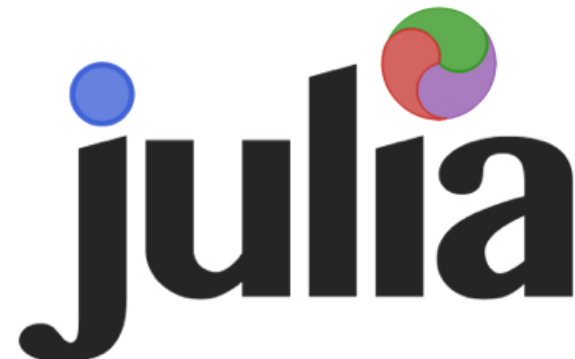
- * DataFrames.jl

- * TensorFlow.jl

October 14, 2016

- wookyoung noh

- <https://github.com/wookay>



목차 1

- * 발표자 소개

- * Julia 0.5

- * Julia Packages

 - DataFrames.jl & 경쟁자

 - TensorFlow.jl & 경쟁자

목차 2

* Julia 커뮤니티

- 깃헙, 메일링 리스트
- JuliaCon, Julia in the classroom

* Julia Korea 커뮤니티

- 깃헙, 페이스북, 슬랙
- 줄리아 문서 번역 프로젝트

* 개발 툴

- REPL, Jupyter notebook, Juno IDE

* Julia 0.5

- 코딩 시간

* Julia 0.6, 1.0, 2.0

발표자 소개

- <https://github.com/wookay/hackdiary/blob/master/merged/Julia.md>
- <https://github.com/wookay/journal/wiki/언어-덕후의-일기>

Julia 0.5

* 2016년 9월 19일 릴리즈

- Version 0.5.0 (2016-09-19 18:14 UTC)
- <https://github.com/JuliaLang/julia/milestone/14>

```
# Julia Packages
```

```
julia> Pkg.add("DataFrames")
```

```
julia> using DataFrames
```

```
julia> Pkg.add("TensorFlow")
```

```
julia> using TensorFlow
```

Julia Statistics

Statistics and Machine Learning made easy in Julia

- <https://github.com/JuliaStats>

DataFrames.jl

library for working with tabular data in Julia

- <https://github.com/JuliaStats/DataFrames.jl>

경쟁자

- * R

- * Python pandas


```
# pandas, DataFrames.jl | wc
```

```
~/work/python/pandas $ git shortlog --numbered --summary | wc  
757      2098     14956
```

```
~/julia/v0.5/DataFrames $ git shortlog --numbered --summary | wc  
105      301      2118
```

<https://github.com/JuliaStats/DataFrames.jl/graphs/contributors>

 [JuliaStats](#) / [DataFrames.jl](#)

 Watch ▾ 57

 Unstar 313

 Fork 159

[Code](#) [Issues 139](#) [Pull requests 37](#) [Projects 0](#) [Wiki](#) [Pulse](#) [Graphs](#)

Contributors

Commits

Code frequency

Punch card

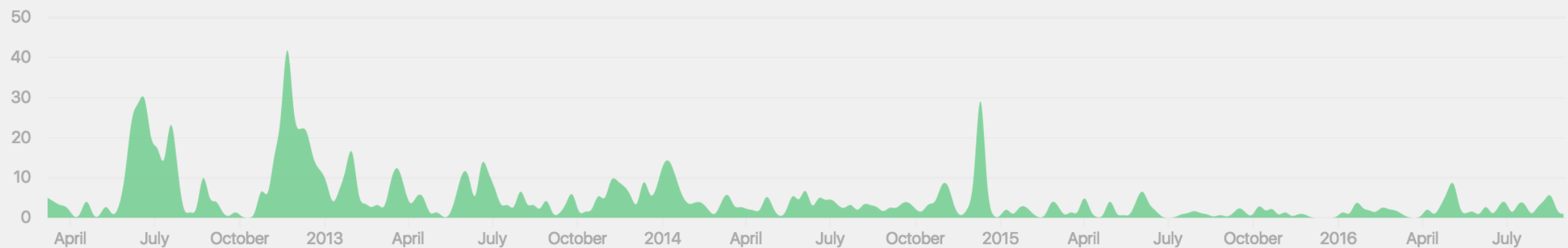
Network

Members

Mar 25, 2012 – Sep 20, 2016

Contributions: **Commits** ▾

Contributions to master, excluding merge commits



johnmyleswhite

#1

317 commits / 187,854 ++ / 113,485 --



powerdistribution

#2

203 commits / 18,933 ++ / 16,497 --



* John Myles White

<http://www.oreilly.com/pub/au/4730>



John Myles White

Statistics and machine learning educator

jmw@johnmyleswhite.com | [@johnmyleswhite](https://twitter.com/johnmyleswhite)

Princeton, New Jersey

Areas of Expertise:

- machine learning
- statistics
- data science
- R
- consulting
- speaking
- training
- writing

Biography

Books

Multimedia

Praise



Bandit Algorithms for Website Optimization

by John Myles White

December 2012

Print: **\$19.99**

Ebook: **\$16.99**



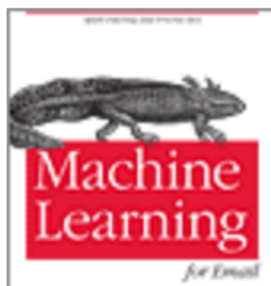
Machine Learning for Hackers

by Drew Conway, John Myles White

February 2012

Print: **\$49.99**

Ebook: **\$42.99**



Machine Learning for Email

by Drew Conway, John Myles White

October 2011

Print: **\$24.99**

Ebook: **\$20.99**

TensorFlow.jl

Julia wrapper for TensorFlow

- <https://github.com/malmaud/TensorFlow.jl>

경쟁자

- * Python

- * C++

TensorFlow

TensorFlow is an Open Source Software Library for Machine Intelligence

- <https://www.tensorflow.org/>

“ TensorFlow was originally developed by researchers and engineers working on the Google Brain Team within Google's Machine Intelligence research organization for the purposes of conducting machine learning and deep neural networks research, but the system is general enough to be applicable in a wide variety of other domains as well. ”

```
# tensorflow, tensorflow/python, TensorFlow.jl | wc
```

```
~/work/tensorFlow $ git shortlog --numbered --summary | wc  
    457    1299    9199
```

```
~/work/tensorFlow/tensorflow/python $ git shortlog --numbered --  
summary . | wc  
    173    506   3529
```

```
~/julia/v0.5/TensorFlow $ git shortlog --numbered --summary | wc  
     5    14    96
```

```
~/work/tensorFlow $ git shortlog --numbered --summary .
```

```
2702  A. Unique TensorFlower
```

```
638   Vijay Vasudevan
```

```
363   Illia Polosukhin
```

```
215   Martin Wicke
```

```
211   Benoit Steiner
```

```
183   terrytangyuan
```

```
179   Derek Murray
```

...

```
~/work/tensorFlow/tensorflow/python $ git shortlog --numbered --  
summary .
```

```
638   A. Unique TensorFlower
```

```
263   Vijay Vasudevan
```

```
114   Eugene Brevdo
```

```
100   Derek Murray
```

```
83    Geoffrey Irving
```

```
67    Benoit Steiner
```

```
63    Martin Wicke
```

Julia 커뮤니티

- Github, 메일링 리스트
- JuliaCon
- Julia in the classroom

Julia 커뮤니티 - Github

<https://github.com/JuliaLang/julia>

- Code
- Issues
- Pull requests

Julia 커뮤니티

<http://julialang.org/community/>

- Mailing lists
- Gitter <https://gitter.im/JuliaLang/julia>
- IRC <http://webchat.freenode.net/?channels=julia>

JuliaCon

* 줄리아 컨퍼런스

- JuliaCon 2014
- JuliaCon 2015
- JuliaCon 2016

JuliaCon 2014 - 시카고 Gleacher Center

- <http://juliacon.org/2014/>
- 유튜브 <https://www.youtube.com/playlist?list=PLP8iPy9hna6TSRouJfvobfxkZFYiPSvPd>

JuliaCon 2015 - MIT

- <http://juliacon.org/2015/>

- 유튜브 <https://www.youtube.com/playlist?list=PLP8iPy9hna6Sdx4soiGrSefrm0PdUWixM>

JuliaCon 2016 - MIT

- <http://juliacon.org/2016/>

- 유튜브 https://www.youtube.com/playlist?list=PLP8iPy9hna6SQPwZUDtAM59-wPzCPyD_S

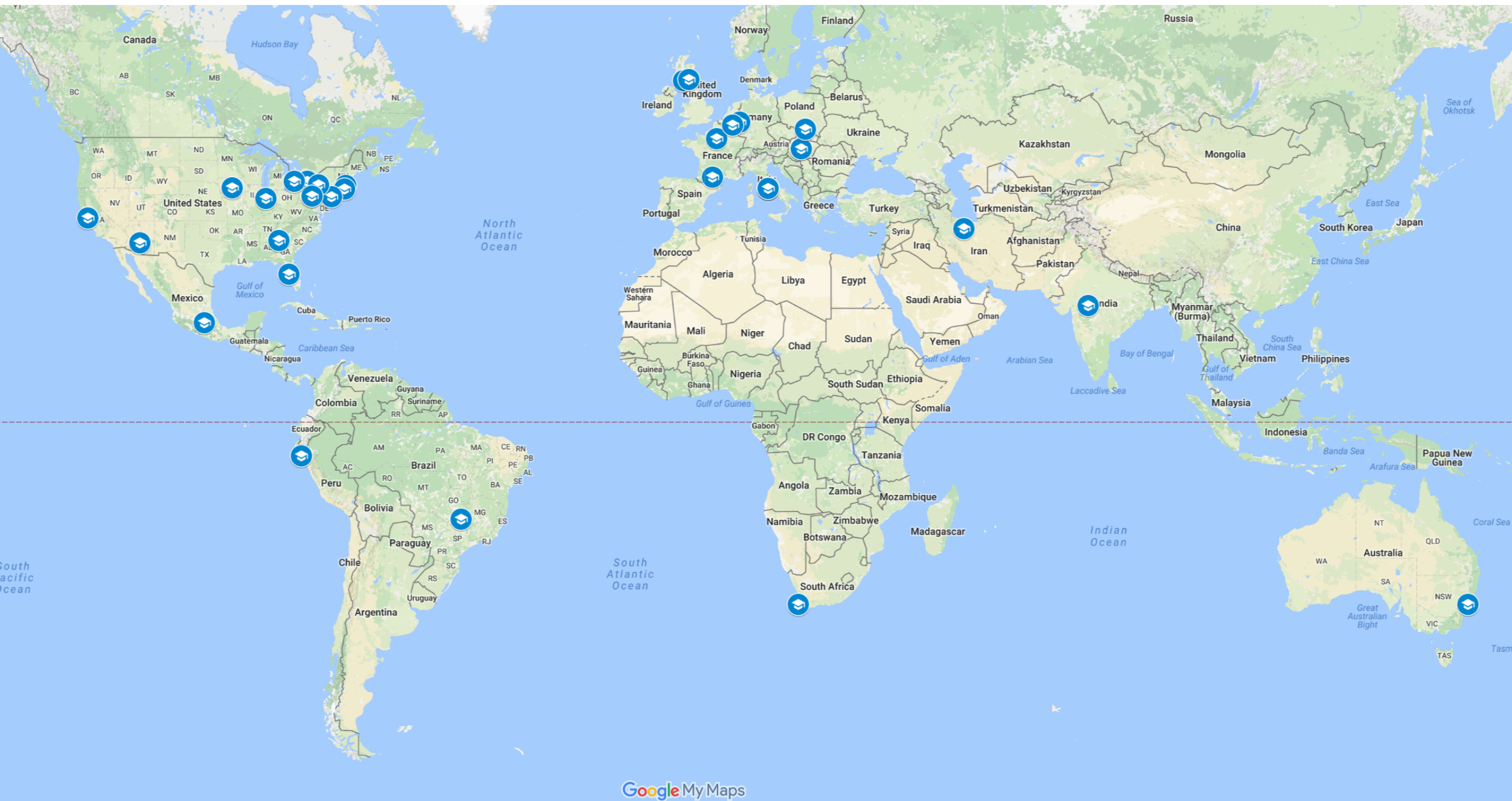
Julia in the classroom

- * 줄리아를 강의에 사용하는 대학

- [https://drive.google.com/open?](https://drive.google.com/open?id=1w6BwQzf87CxKyEGjRD32lW93174&usp=sharing)

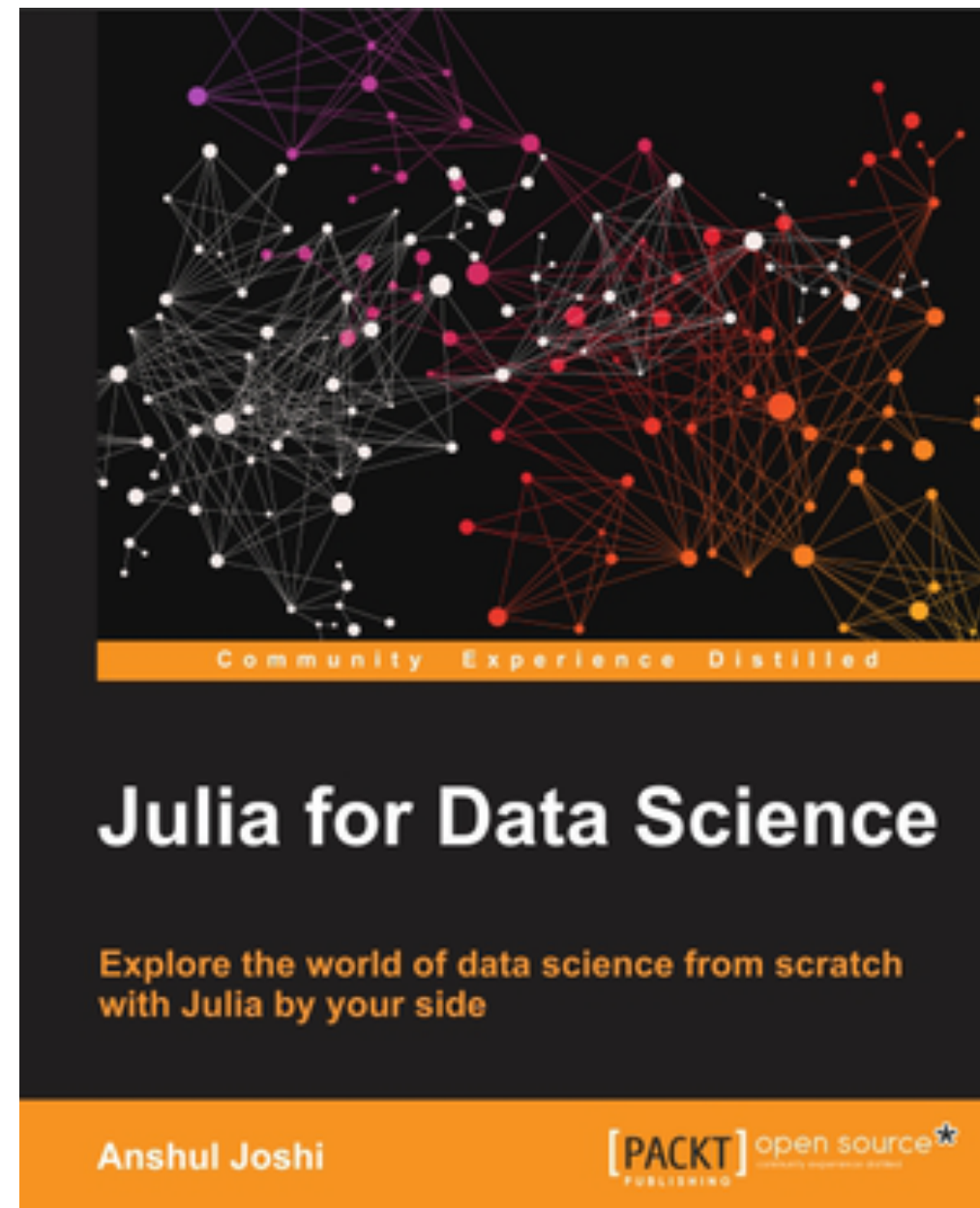
- [id=1w6BwQzf87CxKyEGjRD32lW93174&usp=sharing](https://drive.google.com/open?id=1w6BwQzf87CxKyEGjRD32lW93174&usp=sharing)

Julia in the classroom



Julia for Data Science 책 두권

- <http://julialang.org/learning/#books>



Julia Korea 커뮤니티

- * Github

- <https://github.com/juliakorea>

- * Facebook Group

- <https://www.facebook.com/groups/juliakorea/>

- * Slack

- <http://juliakorea.slack.com/>

Julia Korea 커뮤니티 - Github

- * 줄리아 문서 번역 프로젝트

- <https://github.com/juliakorea/doc>

- * 줄리아 매뉴얼 (일부 번역)

- <http://juliakorea.github.io/latest/>

머시기 Korea 페이스북 커뮤니티

- * Python Korea

- * TensorFlow KR

- * R Korea

머시기 Korea 페이스북 커뮤니티

Python Korea 멤버 13,033명

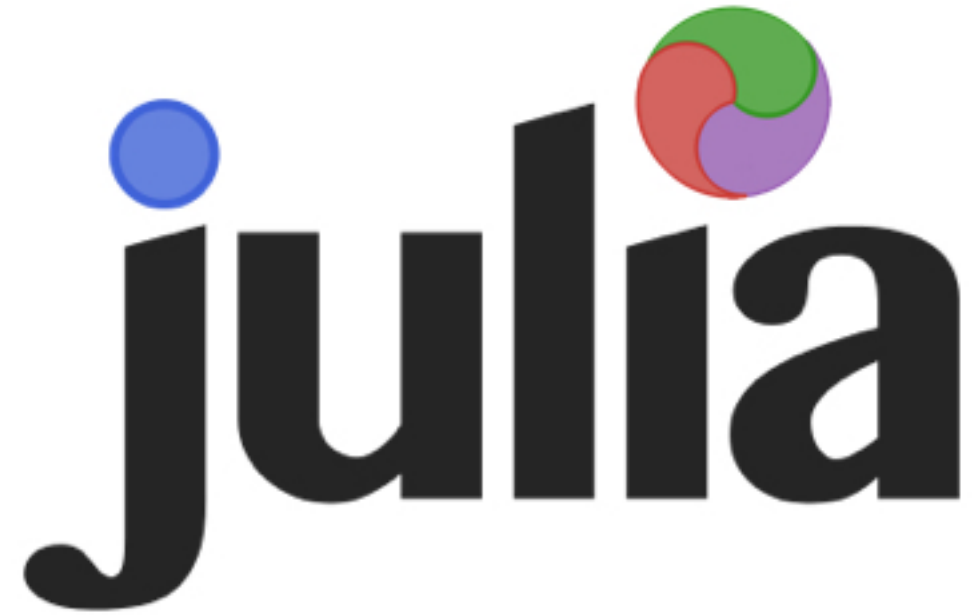
- <https://www.facebook.com/groups/pythonkorea/>

TensorFlow KR 멤버 5,204명

- <https://www.facebook.com/groups/TensorFlowKR/>

R Korea 멤버 2,972명

- <https://www.facebook.com/groups/KoreaRUsers/>



* Julia Korea 멤버 237명

- <https://www.facebook.com/groups/juliakorea/>

Julia Korea 커뮤니티 - 슬랙

- <http://juliakorea.slack.com/>

juliakorea 슬랙 가입하기

- <http://juliakorea-slack.herokuapp.com/>

개발 툴

- REPL
- Jupyter notebook
- Juno


```
# REPL

* 건 乾 ≡
* 리 離 ≡
* 감 坎 ≡
* 곤 坤 ≡
```

REPL - 0.3.12, 0.4.7, 0.5.0, 0.6.0-dev

```
5. (sh)
λ ~ ≡

  _      _ _  _  _
  ( )    | ( ) ( )
  _ _    _ | _ _ _
  | | | | | | | / _ ` |
  | | | _ | | | ( _ |
  _ / | \ _ ' _ | _ | \ _ ' _ |
  | _ /

| A fresh approach to technical computing
| Documentation: http://docs.julialang.org
| Type "help()" for help.
|
| Version 0.3.12 (2015-10-26 12:41 UTC)
| Official http://julialang.org/ release
| x86_64-apple-darwin13.4.0

julia> 
```

```
4. (sh)
λ ~ ≡

  _      _ _  _  _
  ( )    | ( ) ( )
  _ _    _ | _ _ _
  | | | | | | | / _ ` |
  | | | _ | | | ( _ |
  _ / | \ _ ' _ | _ | \ _ ' _ |
  | _ /

| A fresh approach to technical computing
| Documentation: http://docs.julialang.org
| Type "?help" for help.
|
| Version 0.5.0 (2016-09-19 18:14 UTC)
| Official http://julialang.org/ release
| x86_64-apple-darwin13.4.0

julia> 
```

```
2. (julia)
λ ~ ≡

  _      _ _  _  _
  ( )    | ( ) ( )
  _ _    _ | _ _ _
  | | | | | | | / _ ` |
  | | | _ | | | ( _ |
  _ / | \ _ ' _ | _ | \ _ ' _ |
  | _ /

| A fresh approach to technical computing
| Documentation: http://docs.julialang.org
| Type "?help" for help.
|
| Version 0.4.7 (2016-09-18 16:17 UTC)
| Official http://julialang.org/ release
| x86_64-apple-darwin13.4.0

julia> 
```

```
6. (sh)
λ ~ ≡

  _      _ _  _  _
  ( )    | ( ) ( )
  _ _    _ | _ _ _
  | | | | | | | / _ ` |
  | | | _ | | | ( _ |
  _ / | \ _ ' _ | _ | \ _ ' _ |
  | _ /

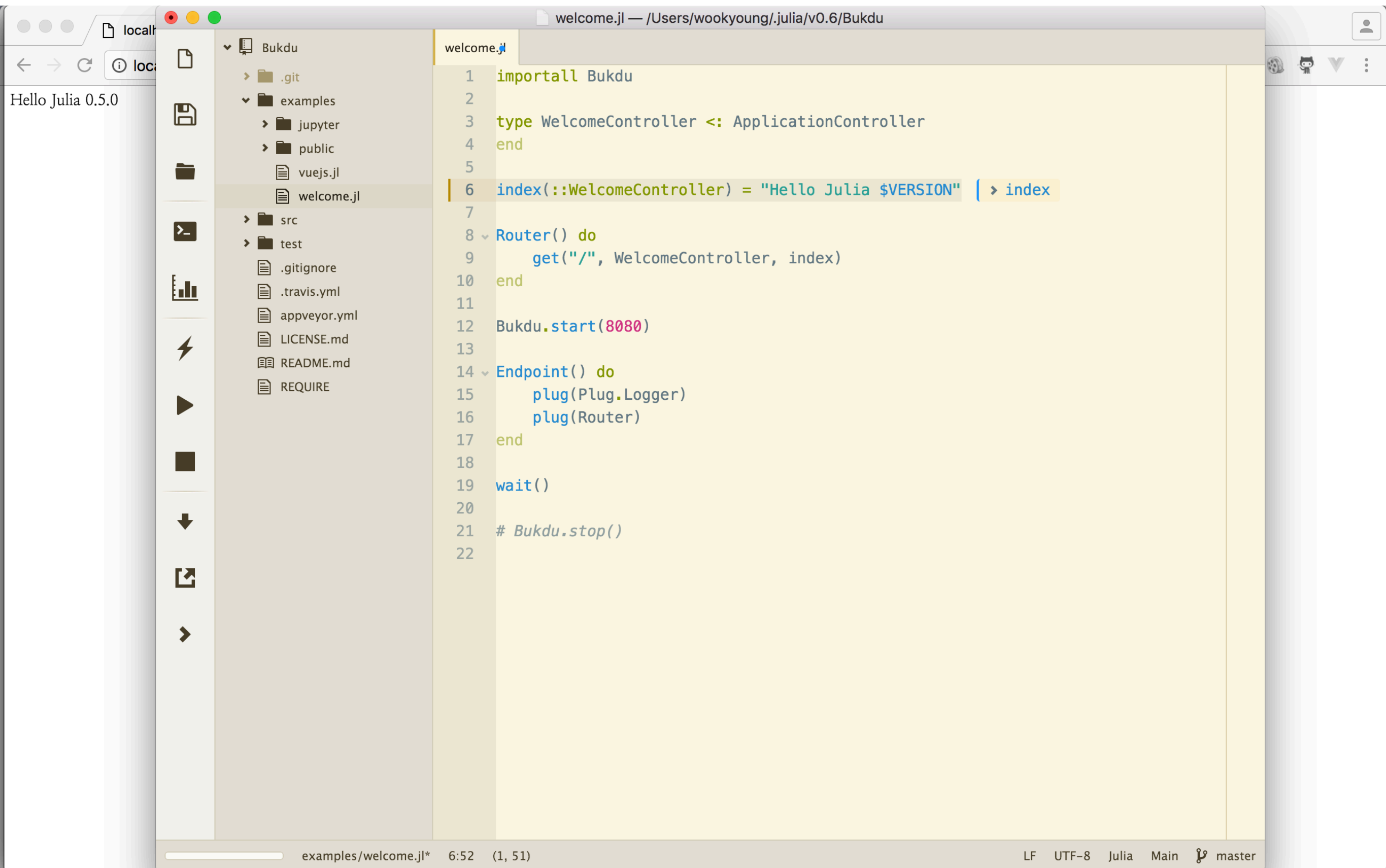
| A fresh approach to technical computing
| Documentation: http://docs.julialang.org
| Type "?help" for help.
|
| Version 0.6.0-dev.716 (2016-09-20 08:45 UTC)
| Commit 721ba7a* (0 days old master)
| x86_64-apple-darwin16.0.0

julia> 
```

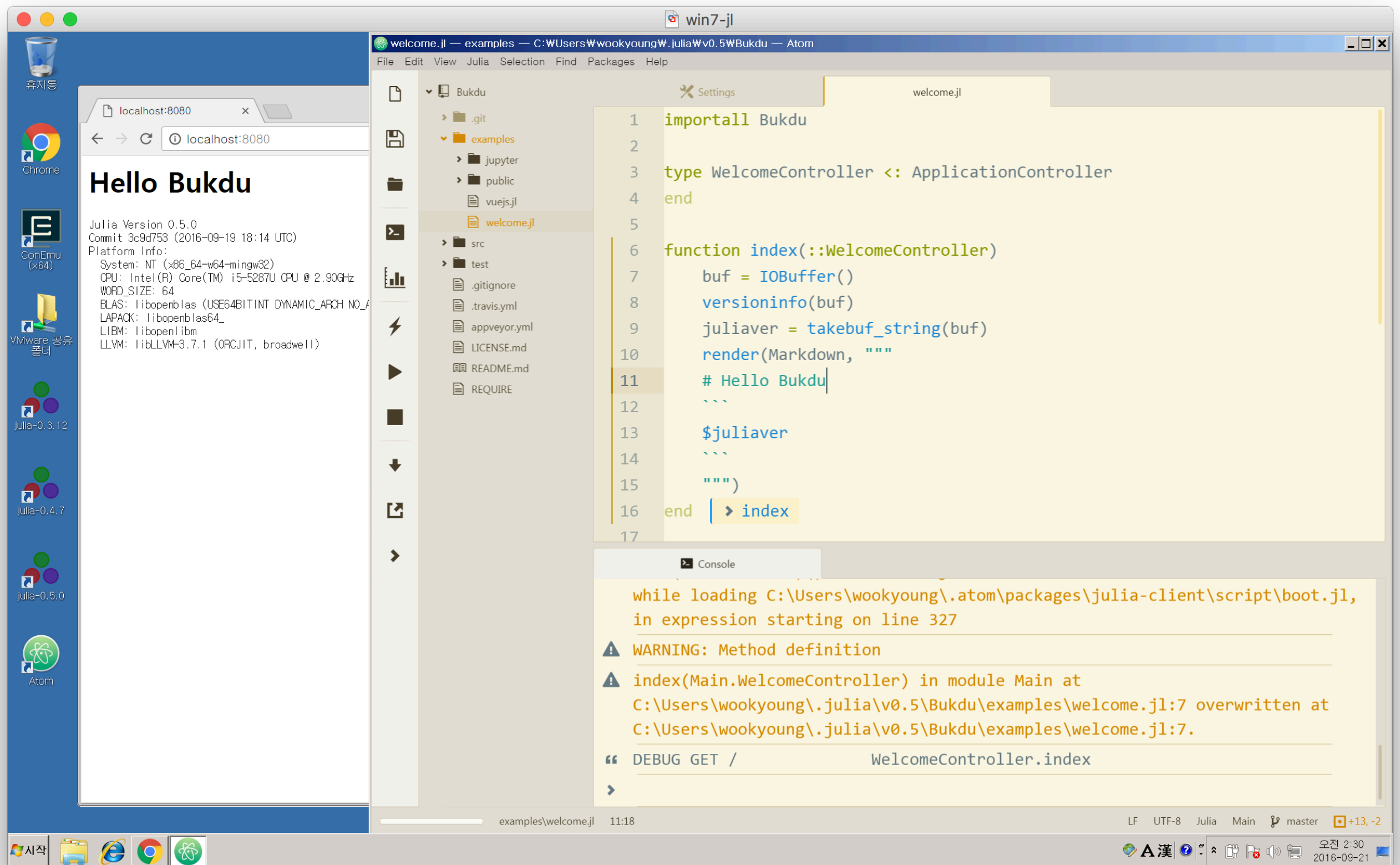
Jupyter notebook

- Project Jupyter <http://jupyter.org/>
- Julia python r

Juno IDE - 맥



Juno IDE - 윈도우



Julia v0.5.0 Release Notes

=====

* <https://github.com/JuliaLang/julia/blob/v0.5.0/NEWS.md>

New language features

- * Generator expressions: ``f(i) for i in 1:n`` ([#4470]). This returns an iterator that computes the specified values on demand. This is useful for computing, e.g. ``sum(f(i) for i in 1:n)`` without creating an intermediate array of values.
- * Generators and comprehensions support filtering using ``if`` ([#550]) and nested iteration using multiple ``for`` keywords ([#4867]).

New language features

- * Fused broadcasting syntax: ``f.(args...)`` is equivalent to ``broadcast(f, args...)`` and nested ``f.(g.(args...))`` calls are fused into a single ``broadcast`` loop ([#17300]). Similarly, the syntax ``x .= ...`` is equivalent to a ``broadcast!(identity, x, ...)`` call and fuses with nested "dot" calls; also, ``x .+= y`` and similar is now equivalent to ``x .= x .+ y``, rather than ``x = x .+ y`` ([#17510]).

New language features

- * Macro expander functions are now generic, so macros can have multiple definitions (e.g. for different numbers of arguments, or optional arguments) ([#8846], [#9627]). However note that the argument types refer to the syntax tree representation, and not to the types of run time values.
- * Varargs functions like ``foo{T}(x::T...)`` may now restrict the number of such arguments using ``foo{T,N}(x::Vararg{T,N})`` ([#11242]).
- * ``x ∈ X`` is now a synonym for ``x in X`` in ``for`` loops and comprehensions, as it already was in comparisons ([#13824]).

New language features

- * The ``PROGRAM_FILE`` global is now available for determining the name of the running script ([#14114]).
- * The syntax ``x.:sym`` (e.g. ``Base.:+``) is now supported, while using ``x.(:sym)`` or ``x.(i)`` for field access are deprecated in favor of ``getfield`` ([#15032]).
- * Function return type syntax ``function f()::T`` has been added ([#1090]). Values returned from a function with such a declaration will be converted to the specified type ``T``.

New language features

- * Many more operators now support ``.`` prefixes (e.g. ``.<=``) ([#17393]). However, users are discouraged from overloading these, since they are mainly parsed in order to implement backwards compatibility with planned automatic broadcasting of dot operators in Julia 0.6 ([#16285]). Explicitly qualified operator names like ``Base.<=`` should now use ``Base.:<=`` (prefixed by ``@compat`` if you need 0.4 compatibility via the ``Compat`` package).

New language features

- * User-extensible bounds check elimination is now possible with the new `@boundscheck` macro ([#14474]). This macro marks bounds checking code blocks, which the compiler may remove when encountered inside an `@inbounds` call.

코딩 시간

Julia | wc

~/work/julia master git shortlog --numbered --summary | wc
621 1799 12624 # Sep 30, 2016

~/work/julia tags/v0.5.0 git shortlog --numbered --summary | wc
614 1778 12478 # Sep 19, 2016

~/work/julia tags/v0.4.0 git shortlog --numbered --summary | wc
465 1358 9485 # Oct 2015

~/work/julia tags/v0.3.0 git shortlog --numbered --summary | wc
310 909 6339 # Aug 2014

~/work/julia v0.2.0 git shortlog --numbered --summary | wc
186 550 3799 # Nov 2013

~/work/julia tags/v0.1 git shortlog --numbered --summary | wc
112 339 2314 # Feb 2013

~/work/julia master git shortlog --numbered --summary

7887	Jeff Bezanson
3605	Stefan Karpinski
2724	Viral B. Shah
2165	Jameson Nash
1420	Tony Kelman
1213	Keno Fischer
1199	Tim Holy
861	Yichao Yu
730	Andreas Noack Jensen
724	Mike Nolta
720	Jiahao Chen
683	Steven G. Johnson
632	Jake Bolewski
571	Carlo Baldassi
560	Elliot Saba
409	Katharine Hyatt
333	Amit Murthy
273	Isaiah Norton
262	Simon Kornblith

```
~/work/julia master git log -reverse
```

```
commit a9cbc036ac62dc5ba5200416ca7b40a2f9aa59ea
```

```
Author: Stefan Karpinski <stefan.karpinski@gmail.com>
```

```
Date: Sat Aug 22 20:39:06 2009 -0700
```

```
Initial empty commit.
```

```
commit eb256df11428c8ce63f6cb6ae0bc495645c6eec5
```

```
Author: Jeff Bezanson <bezanson@post.harvard.edu>
```

```
Date: Sun Aug 23 02:02:49 2009 -0400
```

```
beginning work on parser
```

```
commit c474155897f42940d76b3ef8087ab7749e7a3a6b
```

```
Author: Jeff Bezanson <bezanson@post.harvard.edu>
```

```
Date: Sun Aug 23 02:46:56 2009 -0400
```

```
adding basic [vector] and {list} syntax
```

```
commit 1565577e1041bb2dfe310d31b004ead3a906a1c3
```

```
Author: Jeff Bezanson <bezanson@post.harvard.edu>
```

```
Date: Sun Aug 23 22:23:02 2009 -0400
```


Julia 0.6

- * prompt pasting

- * <https://github.com/JuliaLang/julia/milestone/20>

Julia 1.0

- * 2017년

- * <https://github.com/JuliaLang/julia/milestone/4>

Julia 2.0

* <https://github.com/JuliaLang/julia/milestone/23>

References

- * Julia <http://julialang.org/>
- * JuliaCon <http://juliacon.org/>
- * Packages
 - DataFrames.jl <https://github.com/JuliaStats/DataFrames.jl>
 - TensorFlow.jl <https://github.com/malmaud/TensorFlow.jl>
- * Project Jupyter <http://jupyter.org/>
- * Juno <http://junolab.org/>
- * John Myles White <http://www.johnmyleswhite.com/>
- * TensorFlow <https://www.tensorflow.org/>

77

* 7 人 ㅎ ㄴ ㄷ

* 7 ㅁ 人 ㄴ ㄷ

* ㄷ ㅋ ㅂ ㄹ ㅁ ㅊ