



Apppsilon

Rhino - modern language for data science

ZPP MIMUW 2020-10-15

Goal of the project

Rhino: Code Transpiler to R



Enable Apppsilon data scientists and developers to write R code easier,
using modern syntax and make it more maintainable.

Inspirations:

ES6+ → JS
babeljs.io

By Sebastian McKenzie

TypeScript → JS
typescriptlang.org

By Microsoft

Scala -> Java*
scala-lang.org

By Typesafe

HPHP → PHP/C++
(discontinued)

By Facebook



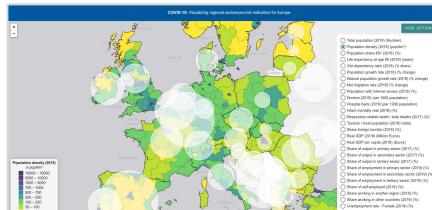
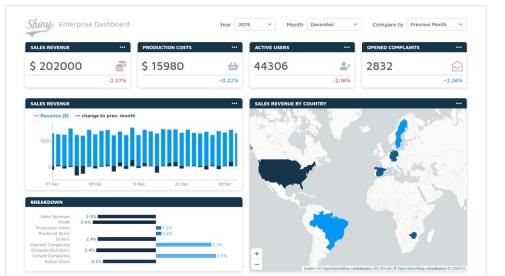
What is Appsilon?

Our tech stack is built around **R Shiny** dashboards and Python machine learning solutions. We work a lot with the cloud.



Example dashboards

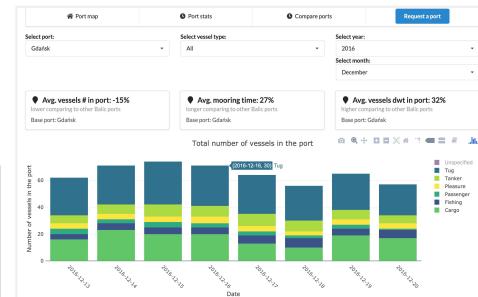
See live demos: <https://demo.apppsilon.ai>



We are a team of **R/Python engineers** who create custom data solutions. We handle everything from data preparation, to statistical modelling & ML, to setting up an infrastructure and implementing advanced dashboards. Every project is an exciting new challenge, where we learn about new industries.



Example ML project: **animal detection**
See video: <https://youtu.be/GIbyERvEoDQ>





What is Apppsilon?



Example ML project: **animal detection**
See video: <https://youtu.be/GIbyERvFoDQ>





Apppsilon

What is Apppsilon?

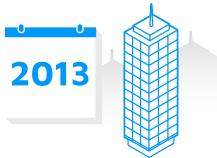


Example ML project: **animal detection**
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Useful Facts



Founded in 2013 by 4 full stack engineers from Google and Microsoft who won the [Global Management Challenge](#) using data science



Multinational Team of 25+
World Class Specialists



Data Scientists, Full Stack Developers, Front-End Developers, Graphic Designers, Software Architects, ML Experts



We work with clients in time zones all over the world, from Hong Kong to London to San Francisco. We travel to a lot of interesting places.



Based in Warsaw, Poland

Our headquarters is based in Warsaw, but we work fully remotely with flexible work hours.



Why R?

- Strong community of industry experts
- Shiny framework - unmatched Time to Value
 - Example code and apps:
<https://shiny.rstudio.com/gallery/>

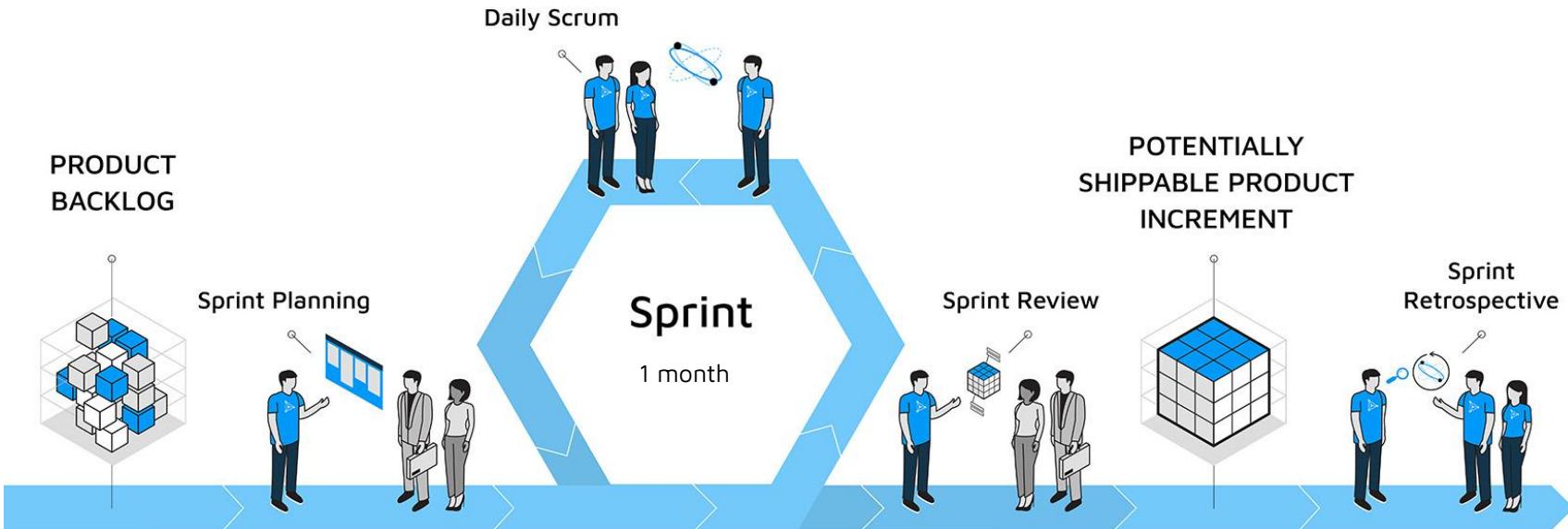
Why Rhino transpiler?

- R language is not evolving fast enough
- R sometimes has strange syntax and behavior:
 - %% infix operators
 - install.packages that doesn't throw an error
 - dict() is named list()
 - Names matching e.g. list(ab = 1)\$a
- Apppsilon needs modern language to improve the way we deliver projects. We want to opensource Rhino.

1. Transpiler: input = Rhino code, output = R code
 2. Shorter lambda syntax (e.g. `(arg1, arg2) => arg1 + arg2` like in JS)
 3. Infix operators without wrapping them in `%%`
 4. Type annotations - like in Python 3 or TypeScript
 5. Unpacking as in modern JavaScript (for example `'my_vec = c(1,2,3)`
`c(a,b,c) = my_vec'` or `'my_list = list(a=1, b=2), list(a, b) = my_list'`)
 6. String interpolation
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- Bonus: native support for modules / imports

All project code will be published under [opensource licence](#) and hosted on Apppsilon github

1. We don't want to overcomplicate.
2. We don't want to optimize language performance. We focus on syntax.
3. We don't want to lose R advantages.
4. We don't want to solve all R problems.
5. We don't want to invent entirely new language.



Contact



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