PROD IS NOT A FOUR-LETTER WORD

How to confidently send R to production.

COLIN FAY

> whoami

Colin FAY

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Hyperactive open source developer.

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THINKR

1 R & DATA SCIENCE ENGINEERING

2 TRAINING

3 CONSULTING

PROD IS NOT A
FOUR-LETTER WORD
How to confidently send R to production.

What are we going to talk about today?

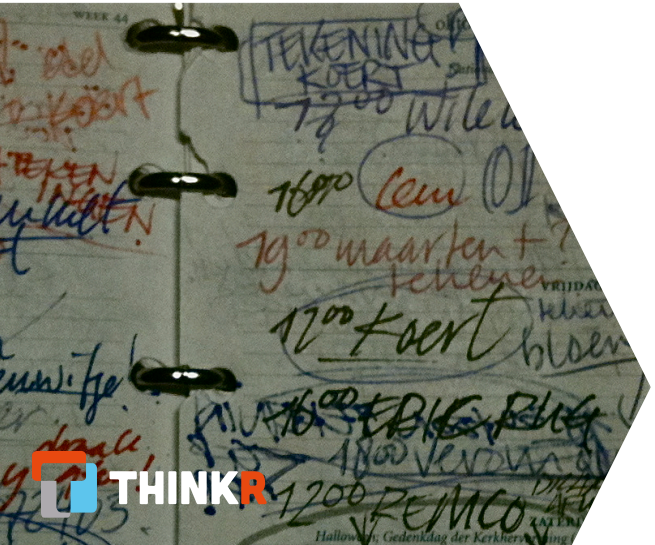
SCHEDULE

01. What does production even mean?

02. About R in production

03. Let's talk about tools

04. R in production, the challenges



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Q & A

Have you ever heard?

"That's good that we have this prototype in R, now let's rewrite this with a production language"

Q & A

We've come to a point that we've heard this so much that we convinced ourselves that this is true.

> All programming languages are basically just bundles of trade-offs, and so no single language is going to be globally superior to another. There really are no production languages – only production engineers.

Gordon Shotwell

https://blog.shotwell.ca/posts/why_i_use_r/

THEY USE R IN PROD

https://github.com/ThinkR-open/companies-using-r

DON’T TELL ME
R IS NOT PRODUCTION READY

01
DID YOU SAY ‘PRODUCTION’?

John Detlefs
@jdetle

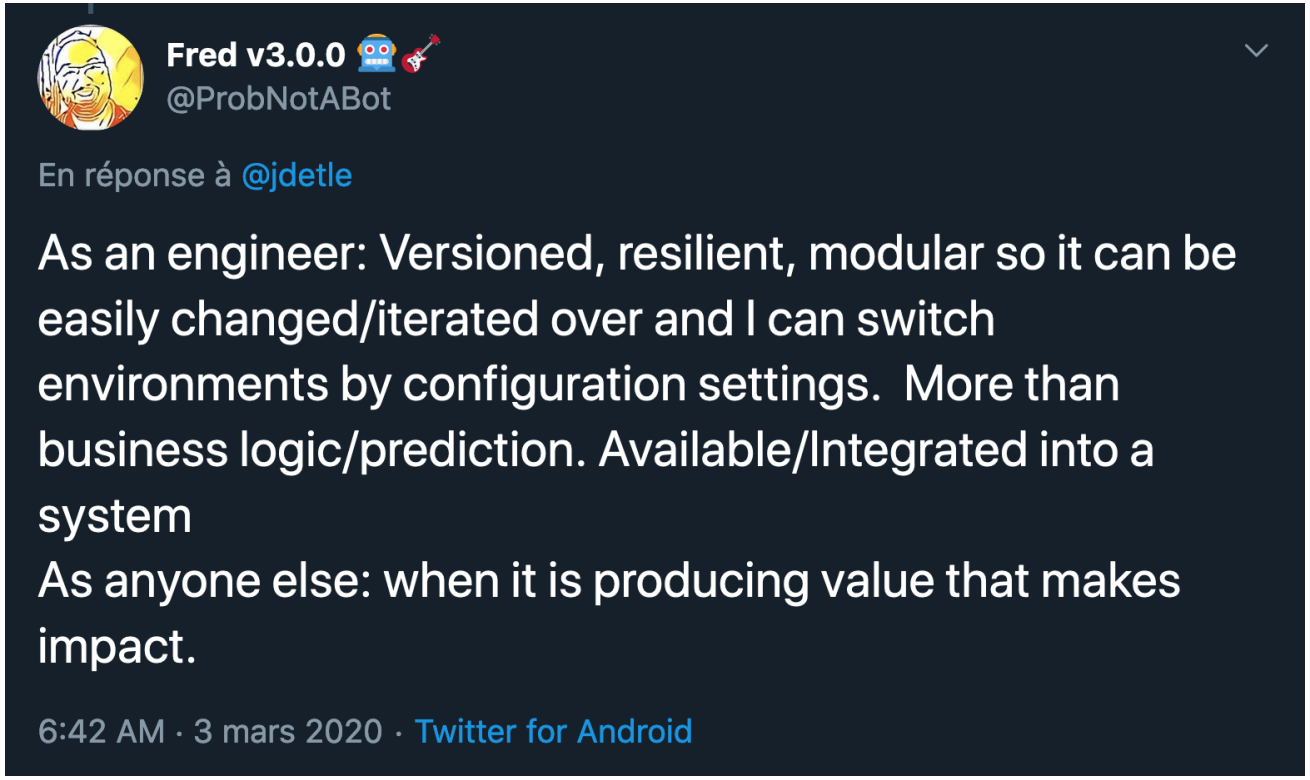
Question for machine learning people in industry: what does it mean for your work to be “in production” what qualifies your models to be “production ready”? See this a lot and I think the meanings change across different domains pretty quickly.

8:26 PM · 2 mars 2020 · Twitter for iPhone

https://twitter.com/jdetle

> Production is anything that is run repeatedly (or continuously) and is relied upon.
>
> Mark Sellors

> Software environments that are used and relied on by real users with real consequences if things go wrong
>
> Joe Cheng



https://twitter.com/ProbNotABot

USERS

THE PRODUCT USER(S)

THE PRODUCT ENGINEER(S)

IN PROD

IS USED

https://twitter.com/eprosenthal

IN PROD

IS USED

IS RELIED UPON

https://twitter.com/dierken

USERS TRUST THE SOFT

TO BE AVAILABLE

TO MAKE DECISION

TO DO THEIR DAILY JOB

DEV TRUST THE SOFT

TO KEEP RUNNING

TO BE BUG FREE

TO BE CUSTOMISABLE

TO BE SAFE TO UPDATE

IN PROD

IS USED

IS RELIED UPON

HAS REAL LIFE IMPACT

https://twitter.com/seanjtaylor

WHAT CAN GO WRONG

❌ SOFTWARE IS UNAVAILABLE

UPDATE BREAKS THE CODE-BASE

UPDATE BREAKS ANOTHER SERVICE

RESULTS ARE NOT RELIABLE

REAL LIFE IMPACT

DATA LOSS

MONEY LOSS

TIME LOSS

BAD DECISIONS

> PRODUCTION_TOOLS == RELIABLE_TOOLS
[1] TRUE

02

ABOUT R AND PRODUCTION

Q & A

How many ways are there to build a package in R?

BUILDING RELIABLE TOOLS

RELY ON FRAMEWORKS

DON'T REINVENT THE WHEEL

TUTORIALS ARE EVERYWHERE

COMMENT, TEST, AND MONITOR

CONVENTIONS ARE AWESOME

(And so is the R community)

03
LET'S TALK ABOUT
TOOLS

R PACKAGES

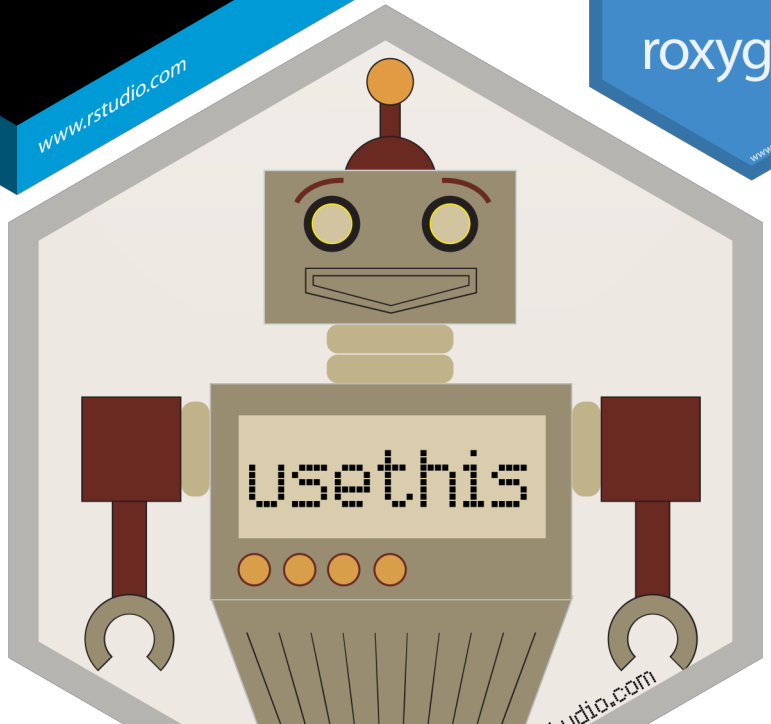
🤝 MAIN GOAL IS TO BE SHARED AND REUSED

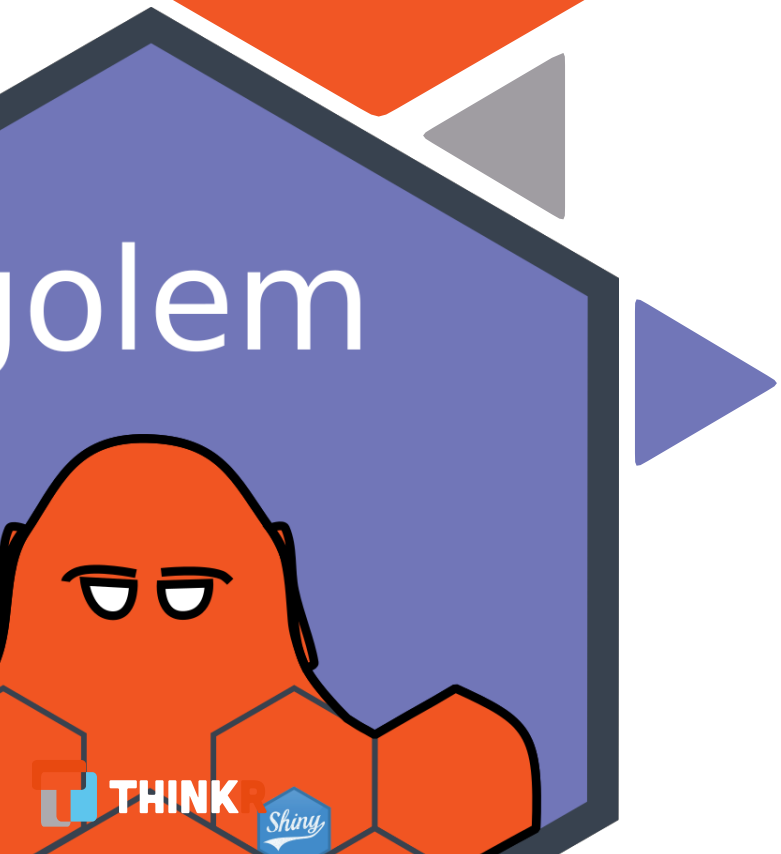
🛠️ YEARS OF TOOLKITS

🍕 JUST A LIBRARY() AWAY

DEVELOP

- AUTOMATE
- DOCUMENT
- TEST





SHINY APPS WITH {GOLEM}

🛠️ FRAMEWORK

🤖 AUTOMATION

🧠 COLLECTIVE INTELLIGENCE

https://www.golemverse.org/

Latest release

0.2.1

bf9d041

Verified

Compare

golem 0.2.1

ColinFay released this yesterday

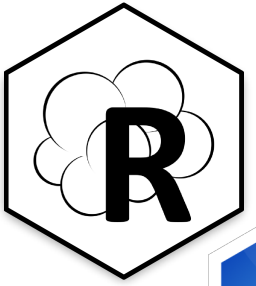
This release matches the CRAN release of {golem} v 0.2.1

Assets 2

- **Source code** (zip)
- **Source code** (tar.gz)

https://cran.r-project.org/package=golem

DEPLOY



- RSTUDIO
- DOCKER / KUBE
- AWS

04

R IN PRODUCTION
THE CHALLENGES

CHALLENGES

NOT THE LANGUAGE

NOT THE TOOLS

CHALLENGES

CULTURAL

ORGANISATIONAL

https://twitter.com/seanjtaylor

Q & A

Who has ever experienced?

"Woaw, your PoC is awesome, let's put that on the production server and give access to 100 users!"

R DEV

The good thing about R is that one can start using it and get results in a couple of hours.

😡 The bad thing about R is that one can start using it and get results in a couple of hours.

THINKR

R DEV

R developers don't learn R as software engineers.

R developers don't know what's needed for productions.

IT might not be receptive.

ADOPT A PROD MINDSET

NO MORE “THAT WORKS ON MY MACHINE”

EVERYTHING IS A PACKAGE

TEST AND DOCUMENT

DON’T START WITH TECHNICAL DEBT

ADOPT A PROD MINDSET

👭 IT ARE YOUR FRIENDS

💪 INFRASTRUCTURE IS CRUCIAL

✍️ RELIABLE CODE MATTERS

YOU CAN BE A GOOD
SOFTWARE ENGINEER

R WORKS
IN PRODUCTION

THANK YOU!

Questions?

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