



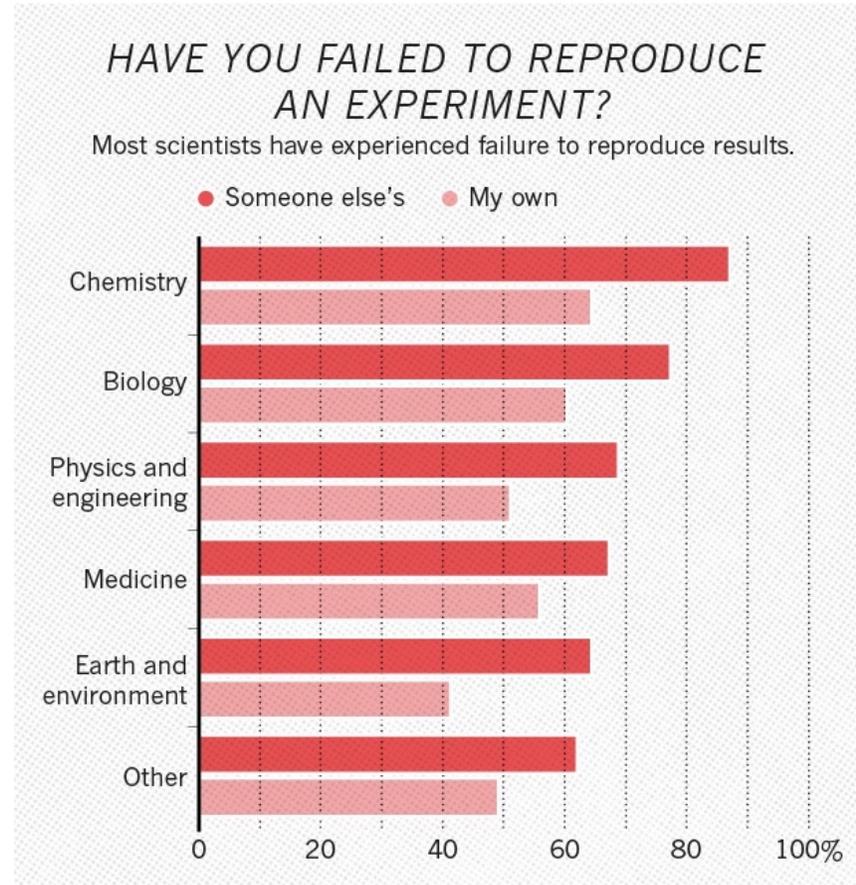
# REANA GitLab integration

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Supervisor: Diego Rodríguez Rodríguez

IT-CDA-DR

# Reproducibility Crisis



<https://www.nature.com/news/1-500-scientists-lift-the-lid-on-reproducibility-1.19970>

# High turnover of researchers



# Pillars of a reproducible research analysis

Data



Where is your input data?

Code



Where is your code?

Environment



Which OS and libraries did you use?

Workflow



Which steps did you follow?

Data



Code



Environment

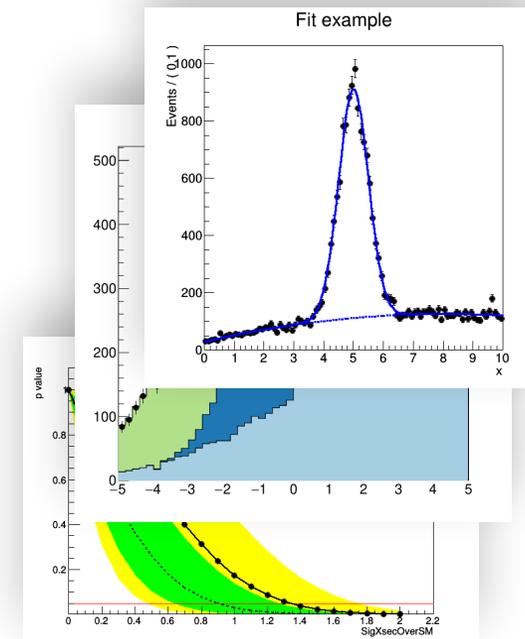


Workflow



reana

Reproducible research data analysis platform



# Currently, manual interaction

```

Leticias-MacBook-Pro:~ leticiawanderley$ reana-client
Usage: reana-client [OPTIONS] COMMAND [ARGS]...

  REANA client for interacting with REANA server.

Options:
  -l, --loglevel [DEBUG|INFO|WARNING]
                                Sets log level
  --help                          Show this message and exit.

Configuration commands:
  ping Check connection to REANA server.

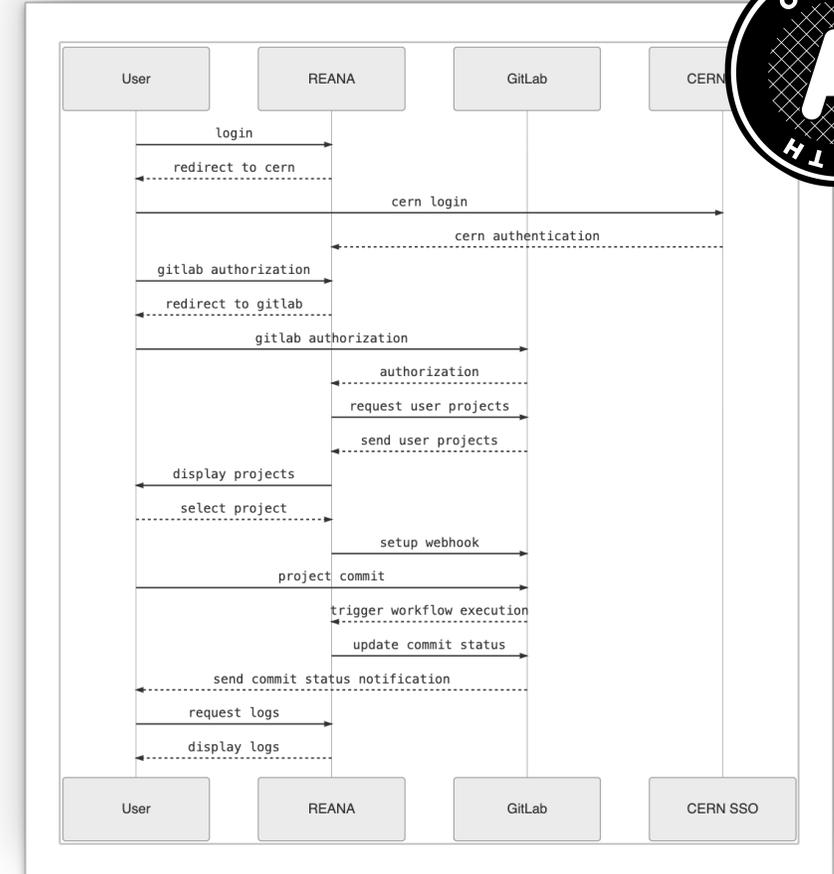
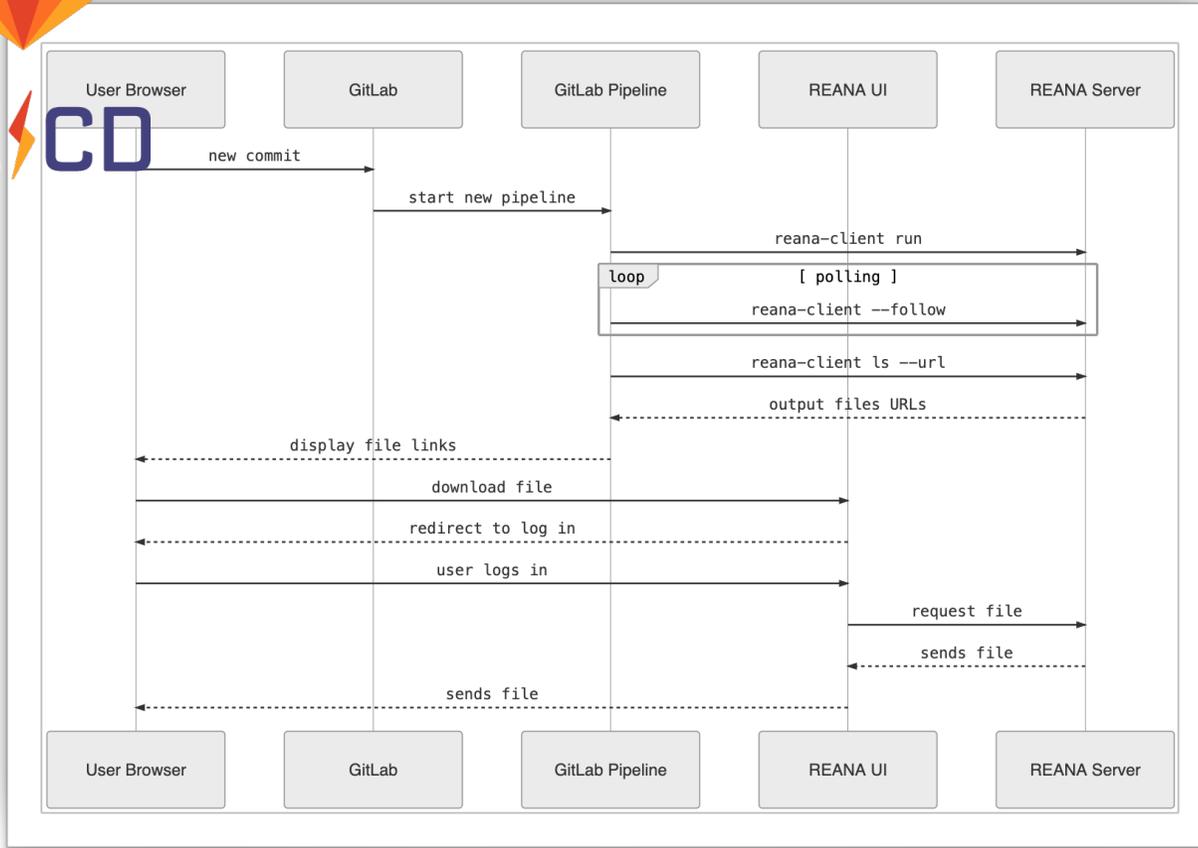
Workflow management commands:
  create Create a new workflow.
  delete Delete a workflow.
  diff   Show diff between two workflows.
  list   List all workflows and sessions.

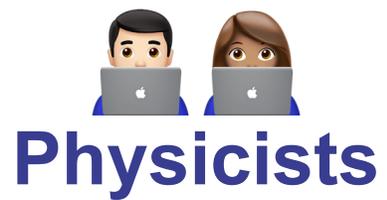
Workflow execution commands:
  logs   Get workflow logs.
  run    Shortcut to create, upload, start a new workflow.
  start  Start previously created workflow.
  status Get status of a workflow.
```

# Can we do better?

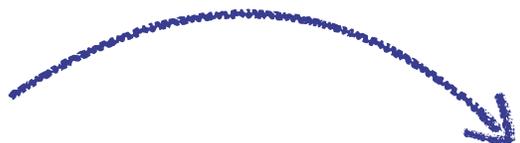


# Designed two solutions depending on user needs

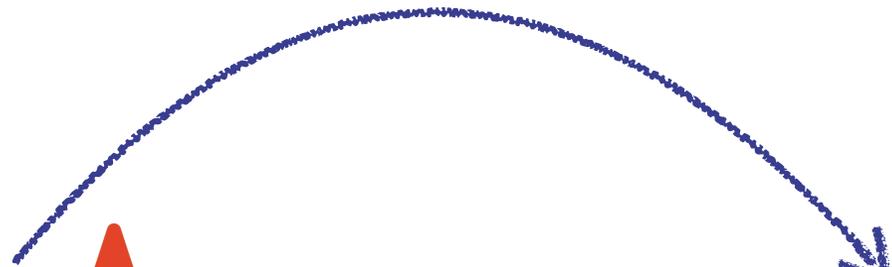




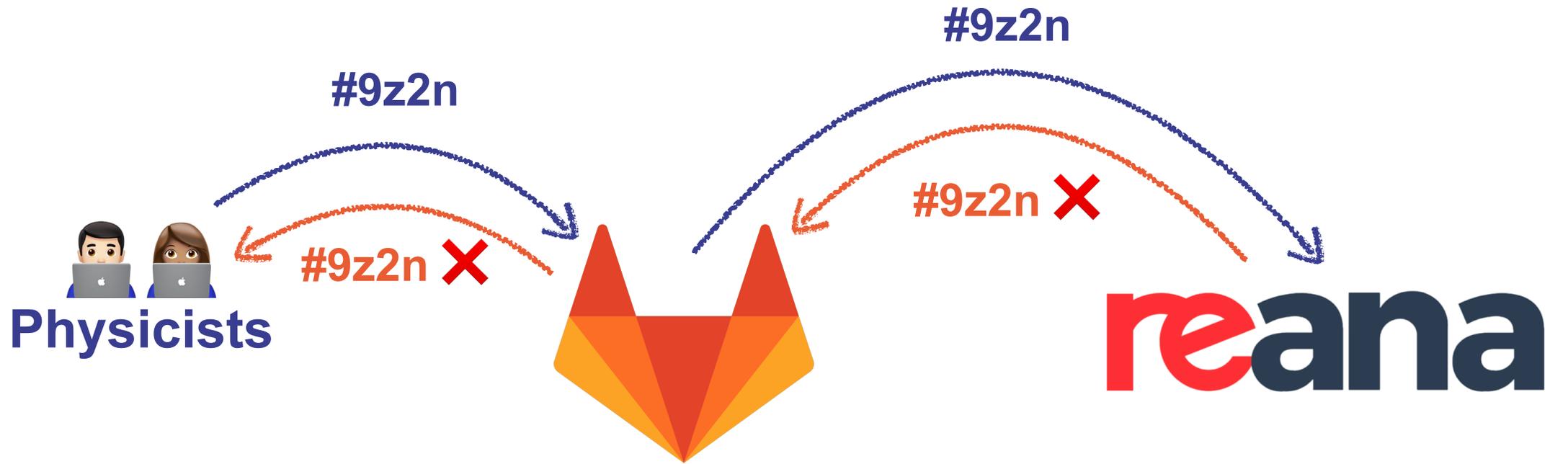
#9z2n



#9z2n



reana



  
**Physicists**



**reana**

**#s6d7**

**#s6d7**

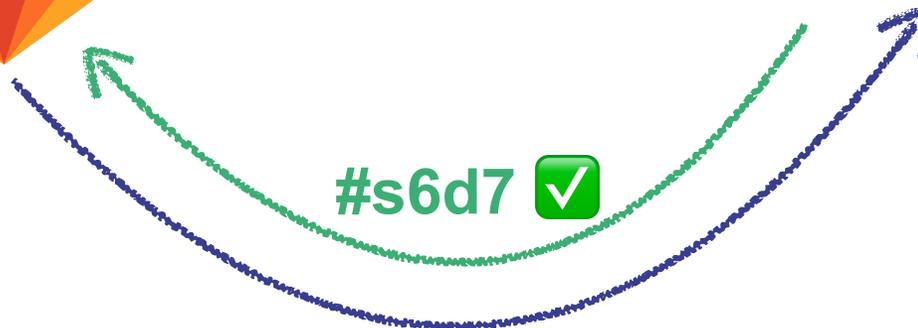
  
**Physicists**



**reana**



#s6d7



#s6d7



CI/CD

reana:

image: "python:3"

script:

# install reana-client

- pip install reana-client

# create the workflow

- reana-client create -n \$CI\_PROJECT\_NAME

# upload code and input files

- reana-client upload ./data ./code

# run the workflow

- reana-client start --follow

# download output files

- reana-client download results/greetings.txt

artifacts:

paths:

- results/greetings.txt

expire\_in: 1 day

when: on\_success



### reana:

```

image: "python:3"
script:
  # install reana-client
  - pip install reana-client

  # create the workflow
  - reana-client create -n $CI_PROJECT_NAME

  # upload code and input files
  - reana-client upload ./data ./code

  # run the workflow
  - reana-client start --follow

  # download output files
  - reana-client download results/greetings.txt

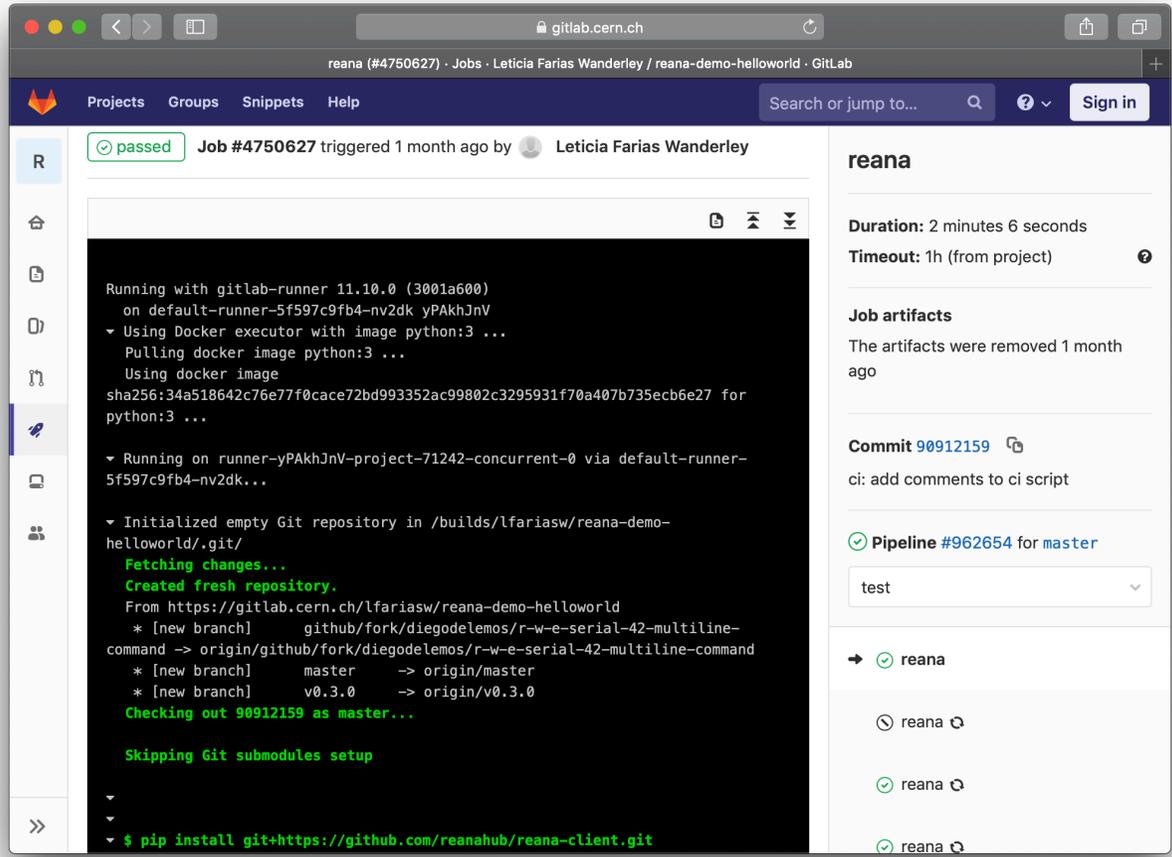
```

### artifacts:

```

paths:
  - results/greetings.txt
expire_in: 1 day
when: on_success

```



Designed for short execution time  
Flexible manual configuration



gitlab.com

User Settings - GitLab

Projects Groups More Search or jump to...

User Settings > User Settings

### Authorize REANA to use your account?

An application called **REANA** is requesting access to your GitLab account. This application was created by [team@reana.io](mailto:team@reana.io). Please note that this application is not provided by GitLab and you should verify its authenticity before allowing access.

This application will be able to:

- **Access the authenticated user's API**  
Grants complete read/write access to the API, including all groups and projects.

Deny Authorize

**Authorize REANA to use your account?**

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gitlab.com

Commits · master · Leticia Wanderley / reana-demo-helloworld · GitLab

Projects ▾ Groups ▾ More ▾

Leticia Wanderley > reana-demo-helloworld > Commits

master ▾ reana-demo-helloworld

09 Aug, 2019 2 commits

-  **Update reana.yaml**  
Leticia Wanderley authored 3 days ago
-  **Update reana.yaml**  
Leticia Wanderley authored 3 days ago

32a646f

26b9ebf1

Zero configuration  
Unlimited execution time

mail.google.com — Private Browsing

reana-demo-helloworld | Pipeline #75598780 has succeeded for  
master | 352a646f 🔗 Inbox x

 **GitLab** <gitlab@mg.gitlab.com> 16:31 (1 minute ago) ☆ ↶ ⋮  
to ▾

---



✓ Your pipeline has passed.

Project	Leticia Wanderley / reana-demo-helloworld
Branch	🔑 master
Commit	🔗 352a646f Update reana.yaml
Commit Author	 Leticia Wanderley

Pipeline #75598780 triggered by  Leticia Wanderley  
successfully completed 4 jobs in 1 stage.





## Impact

Implemented and integrated 

1st CERN GitLab application 

*“The integration of REANA with GitLab is a great step towards running reproducible CMS analysis workflows. This will also significantly facilitate our analysis preservation efforts.  
Clemens Lange (CMS)”*

## Future work

User configurability

Special thanks to Alex, Daniel,  
and the whole GitLab team @ CERN! 🎉



**Thank you!**

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