

# A new beginning of MLOps with Jenkins

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# Jenkins Machine Learning Plugin

A helping tool for Data Science community

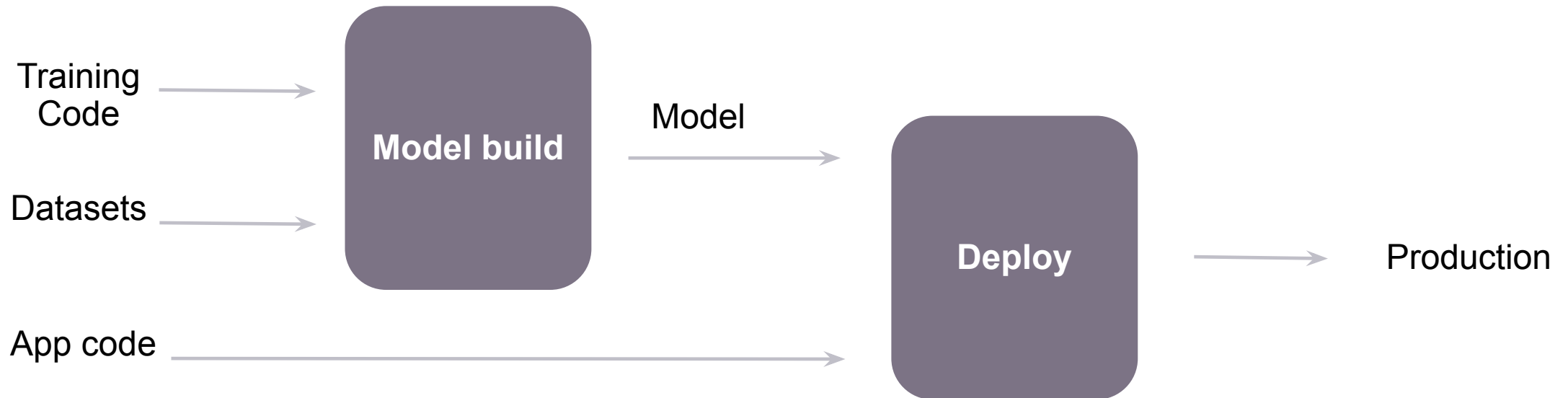


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# Machine Learning Operations

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“ Increase automation and improve the quality of production ML while also focusing on business and regulatory requirements ”



# Barriers for MLOps

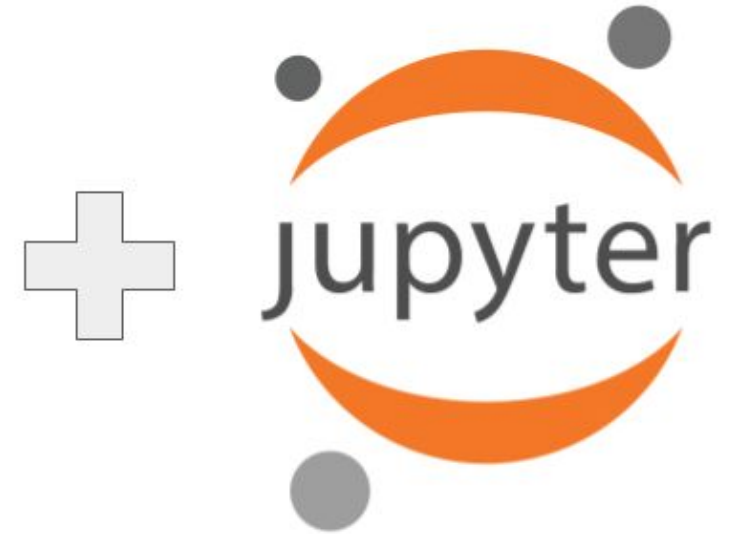
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- Deployment and automation
- Scalability
- Diagnostics
- Collaboration
- Performance
- Monitoring and management

# Jenkins is the way !

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- Clustering tools
  - Docker, Kubernetes etc
- Source code management
  - Git
- Dataset/Model management tools
  - S3 publisher, Pipelines
- Analytic plugins
  - HTML publisher, Summary reporters



# Features

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- Configuring different kernel (Python, R, Julia, Go etc)
- Copy and convert Jupyter Notebooks
- Executing scripts
- Run Jupyter Notebooks directly
- Distributive environment execution
- Dump images and HTML

# Kernel Configuration (global)

- REPL kernels
- Magic commands
- DS community friendly

Kernel Configuration

Kernel	Name	<input type="text" value="python"/>	?
	Language	<input type="text" value="Python"/>	?
	Launch timeout	<input type="text" value="5"/>	?
	Max results	<input type="text" value="3"/>	?

```
loghi@loghi-HP-Notebook: ~  
loghi@loghi-HP-Notebook:~$ jupyter kernelspec list  
Available kernels:  
  javascript    /home/loghi/.local/share/jupyter/kernels/javascript  
  julia-1.0     /home/loghi/.local/share/jupyter/kernels/julia-1.0  
  python3       /home/loghi/.local/share/jupyter/kernels/python3  
  ir            /usr/local/share/jupyter/kernels/ir  
  python2       /usr/local/share/jupyter/kernels/python2
```

# Copy and Convert Jupyter Notebook

Notebook Files

X

File

example-with-images.ipynb

☒ Convert file

Convert Type

Python

Save To

example-with-images.py

Delete After Build

☐

?

?

?

Add new notebook file

# Build scripts

IPython Builder

ML Task name

Training

Language Kernel

javascript

Choose input method

Text Parser

Code

```
var msg = ["Hello", "World!"].join(", ");  
msg  
console.log(msg);  
console.error(msg)  
throw new Error("Oh noes!");
```

# Run script file or Jupyter Notebook

IPython Builder

ML Task name

Training

?

Language Kernel

python

?

Choose input method

☐ Text Parser











☒ File Parser

File Path

example-with-images.ipynb

?

# Dump visual artifacts

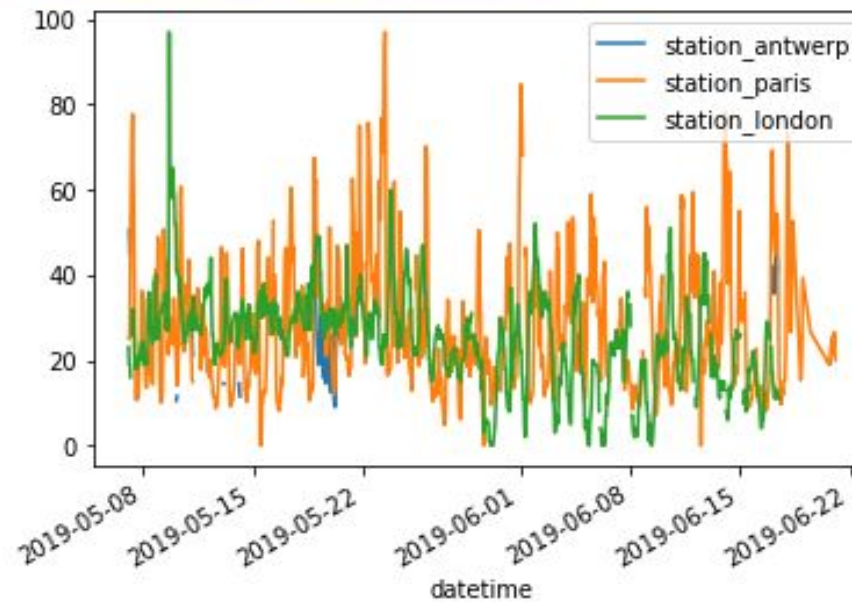
-  Back to Project
-  Status
-  Changes
-  Console Output
-  Edit Build Information
-  Delete build '#52'
-  Git Build Data
-  No Tags
-  **Images and HTML**
-  Previous Build

## Summary of : #52 SUCCESS

### Images

### Training

- [f479aeb4-fb17-323f-b4f0-17dc9d96ddcd.png](#)



# Resources

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- Github → <https://github.com/jenkinsci/machine-learning-plugin>
- Issue Tracking → <https://issues.jenkins-ci.org>
- Gitter → <https://gitter.im/jenkinsci/gsoc-machine-learning-project>
- Jupyter Kernels → <https://github.com/jupyter/jupyter/wiki/Jupyter-kernels>



# Thank you



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