Beyond Inference: Bringing ML into Production

DevConf.CZ 2021

Isabel Zimmerman
Data Science Intern
Forward Deployed AI Engineering

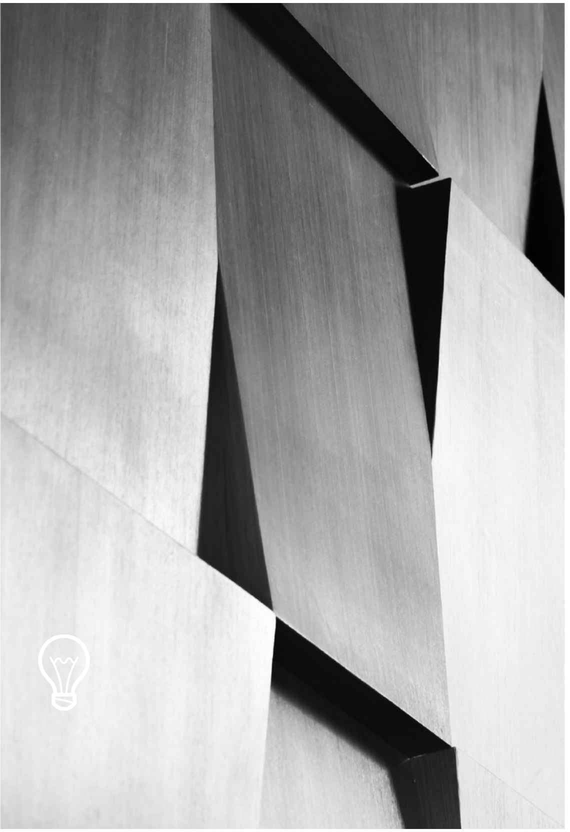
Red Hat

Things to learn

What is model serving?

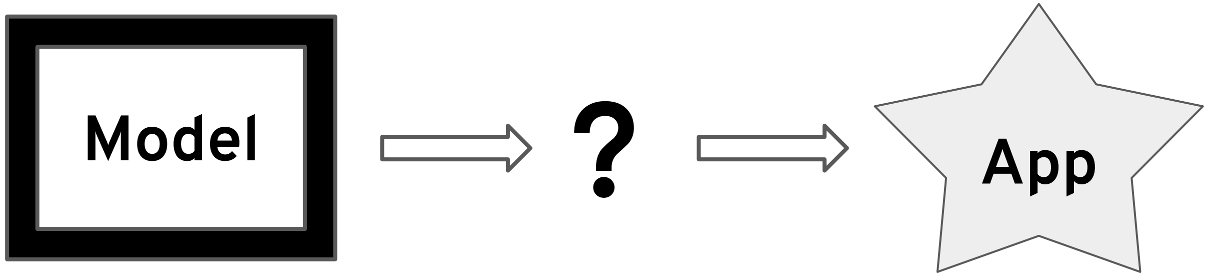
What features of model serving can I utilize?

How can I deploy a model?

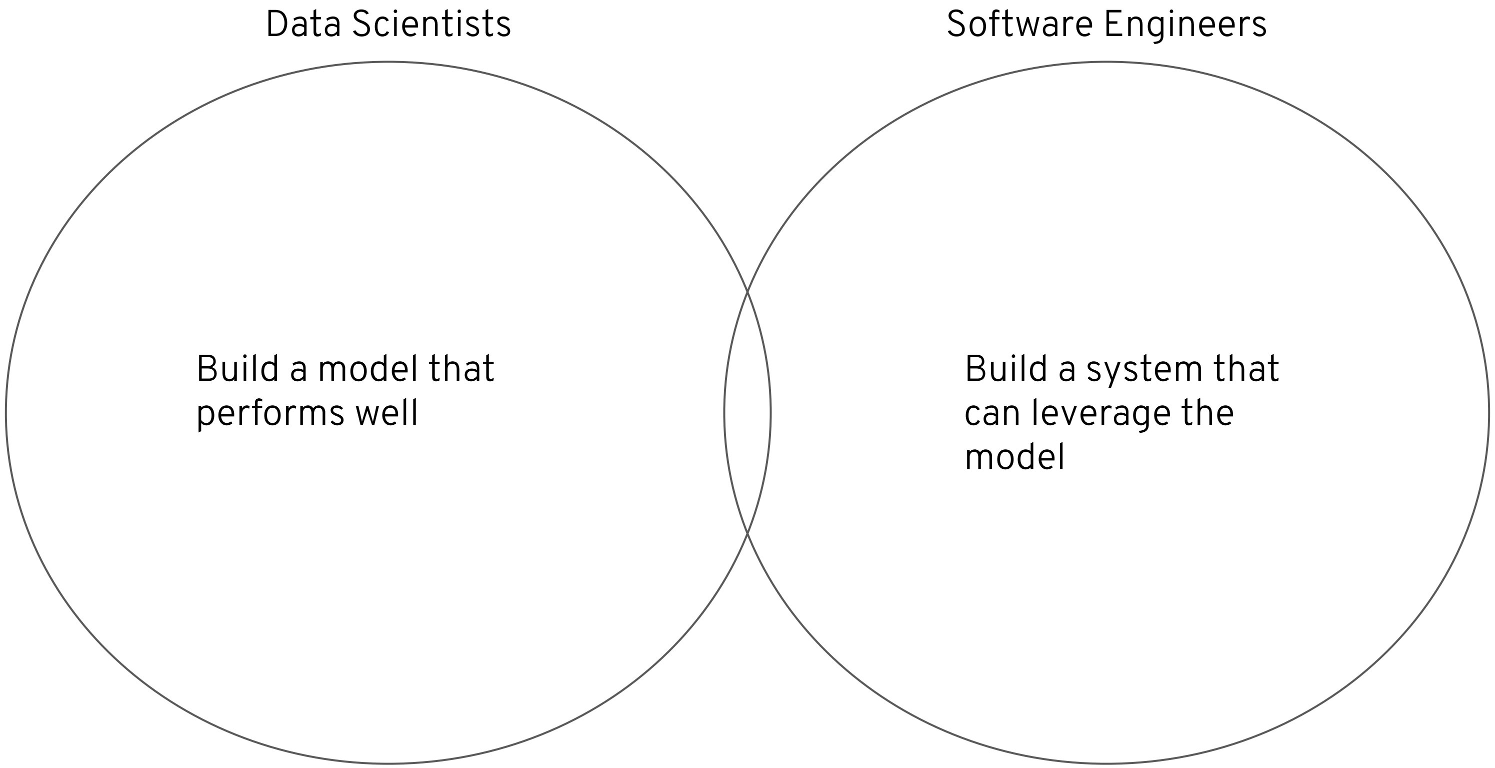


Why model serving?

Why do we need model serving?



Do we need model serving?



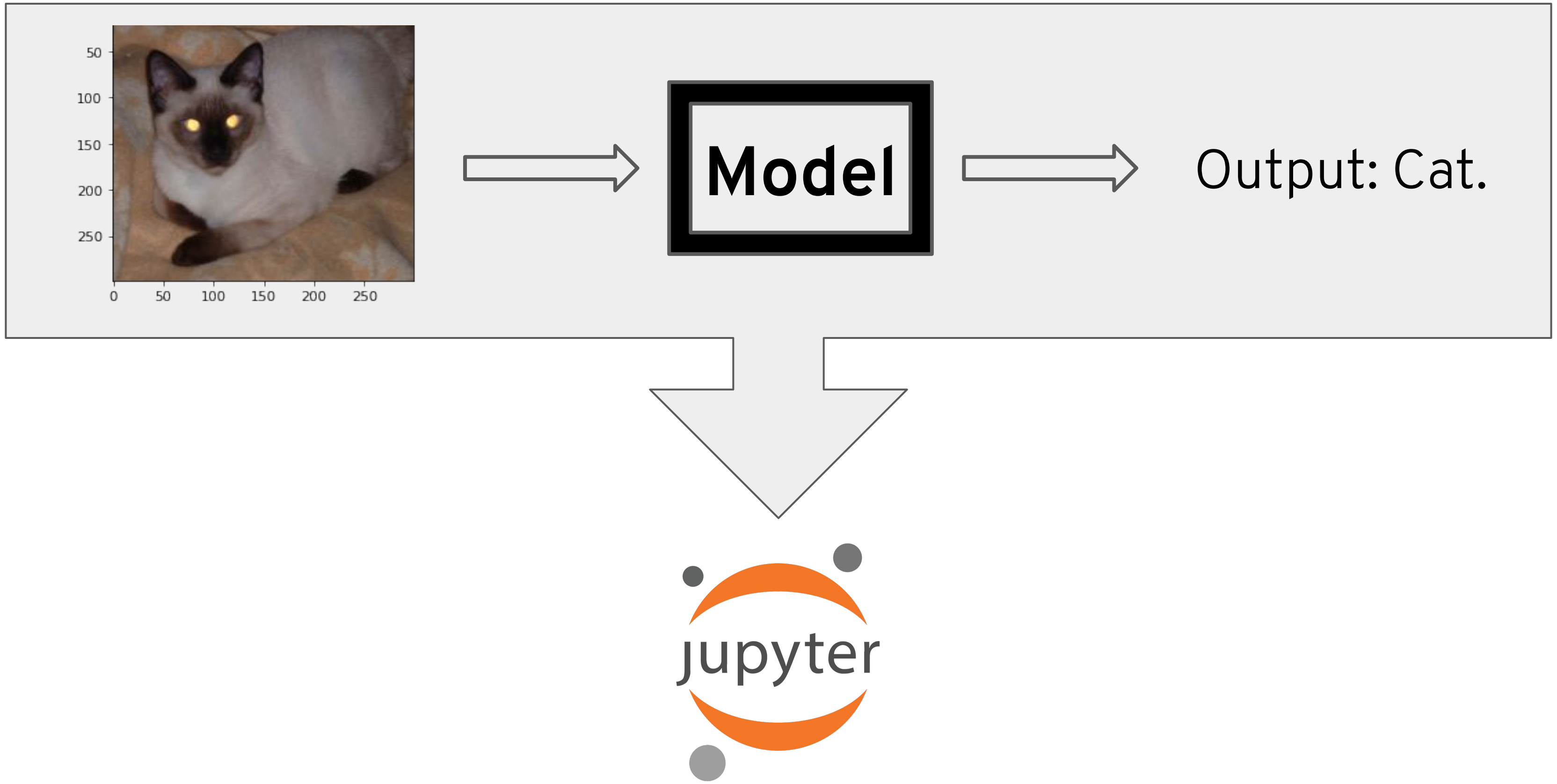
Data Scientists

Build a model that performs well

Software Engineers

Build a system that can leverage the model

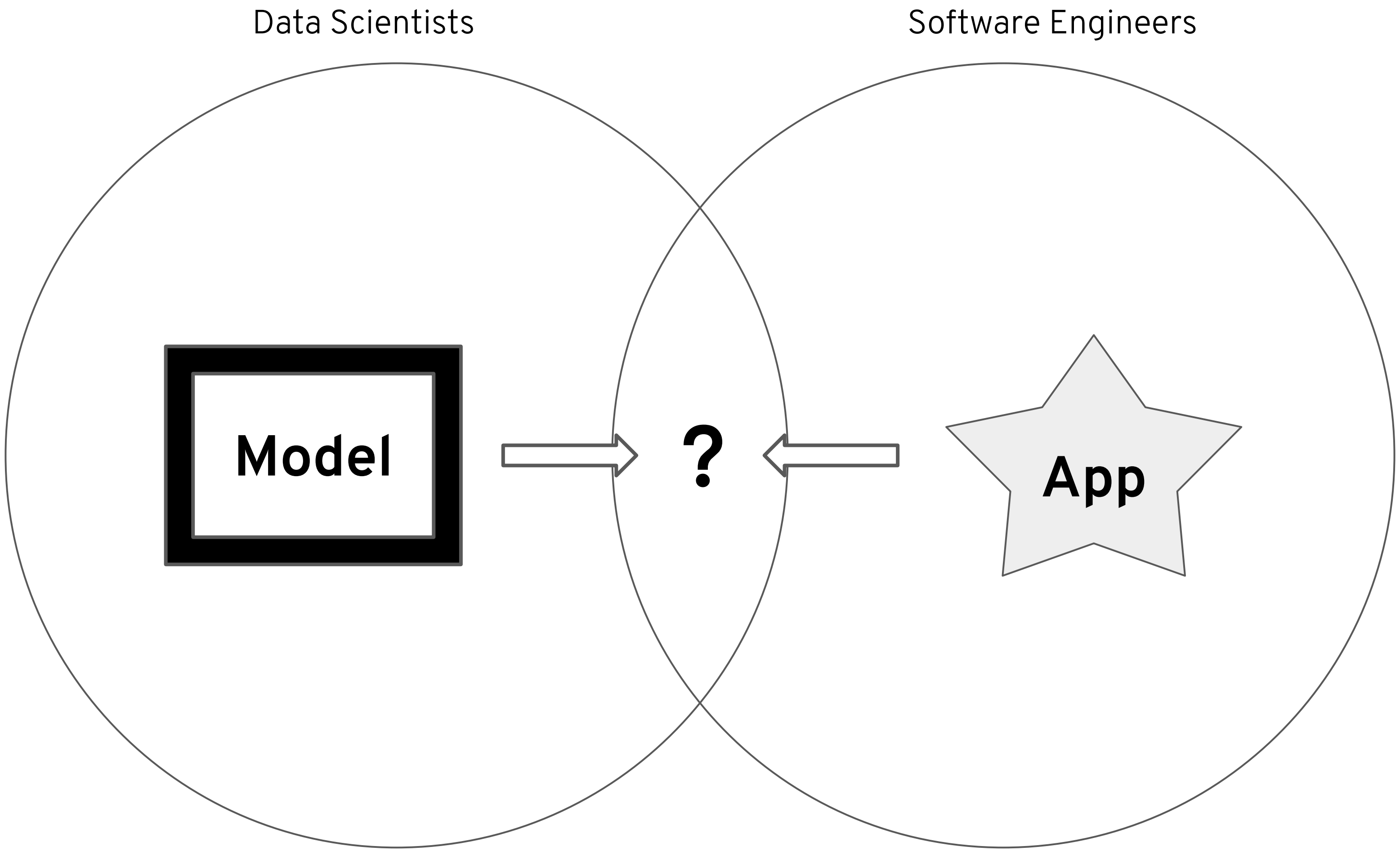
How do models act?



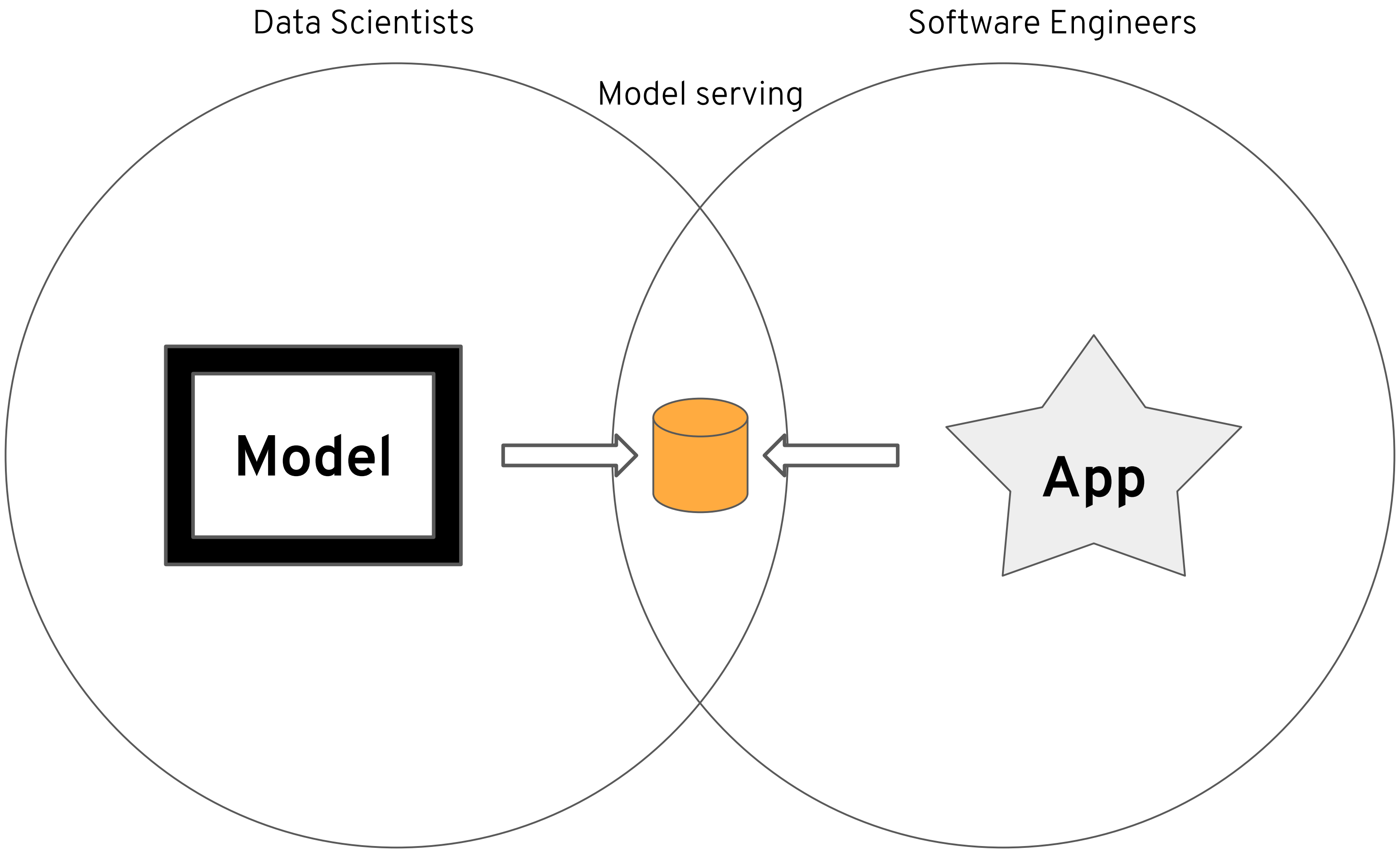
Model

Output: Cat.

What is model serving?



What is model serving?



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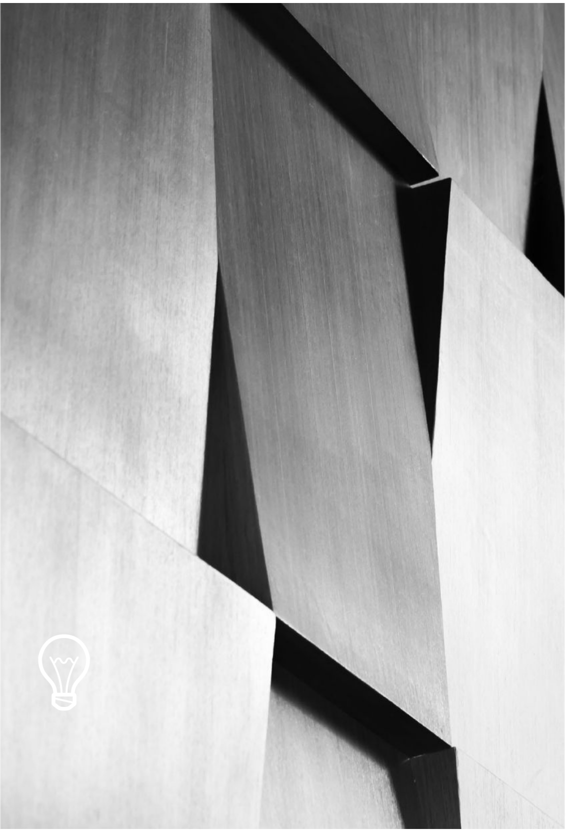
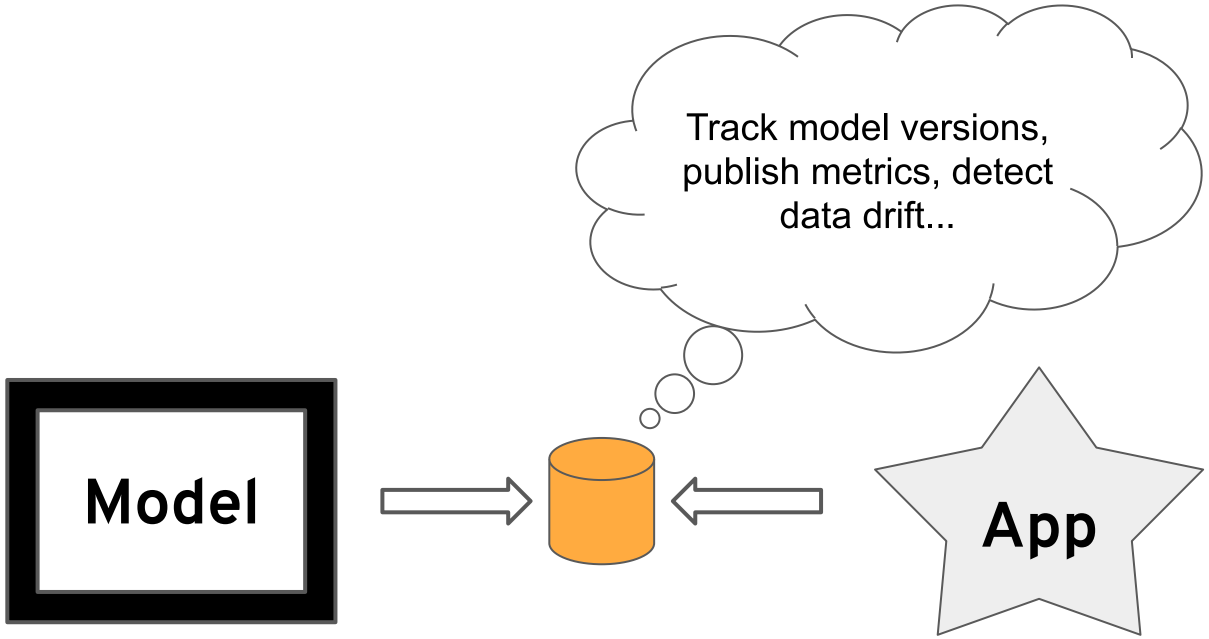
Model serving



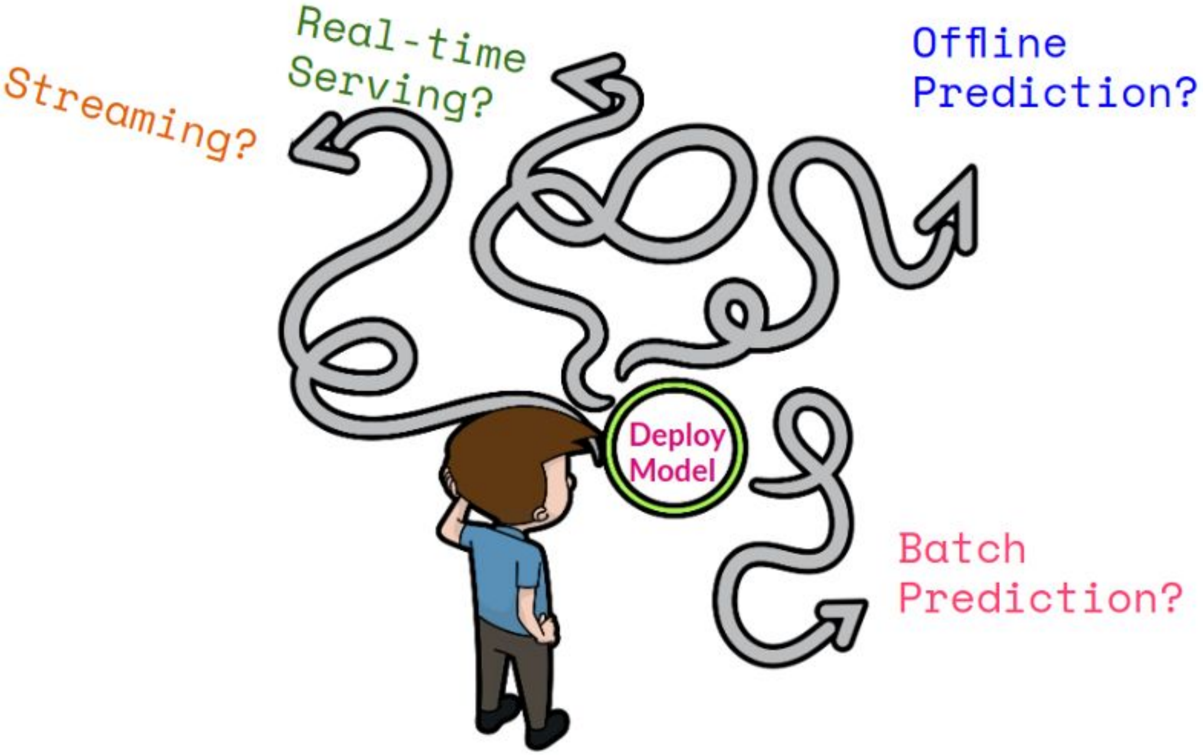
What features should we look for?

How can we make model servers more useful?



Track model versions, publish metrics, detect data drift...

How are you deploying?



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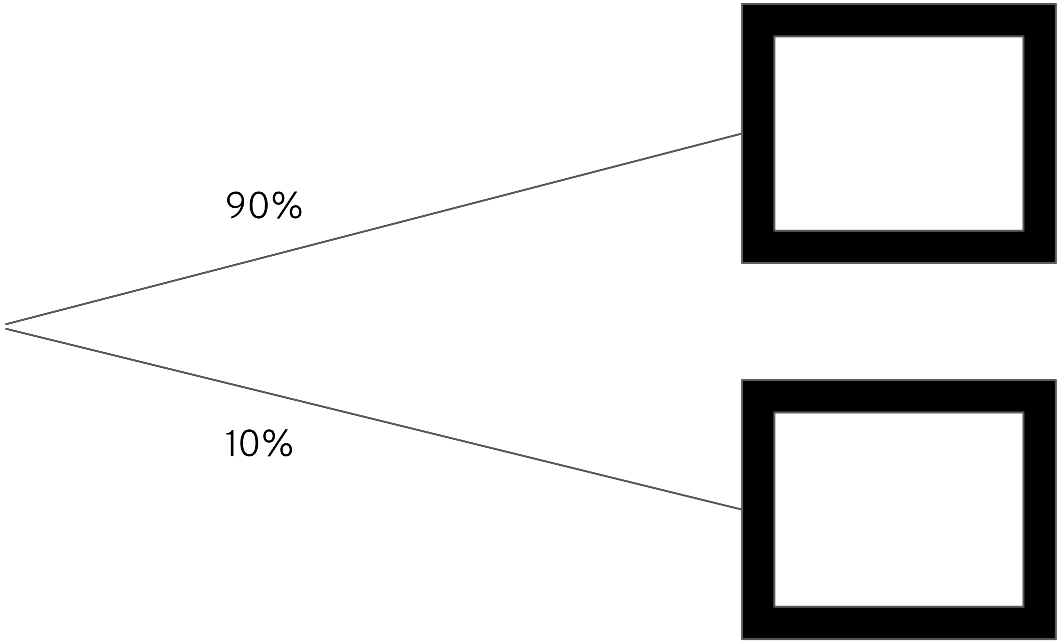
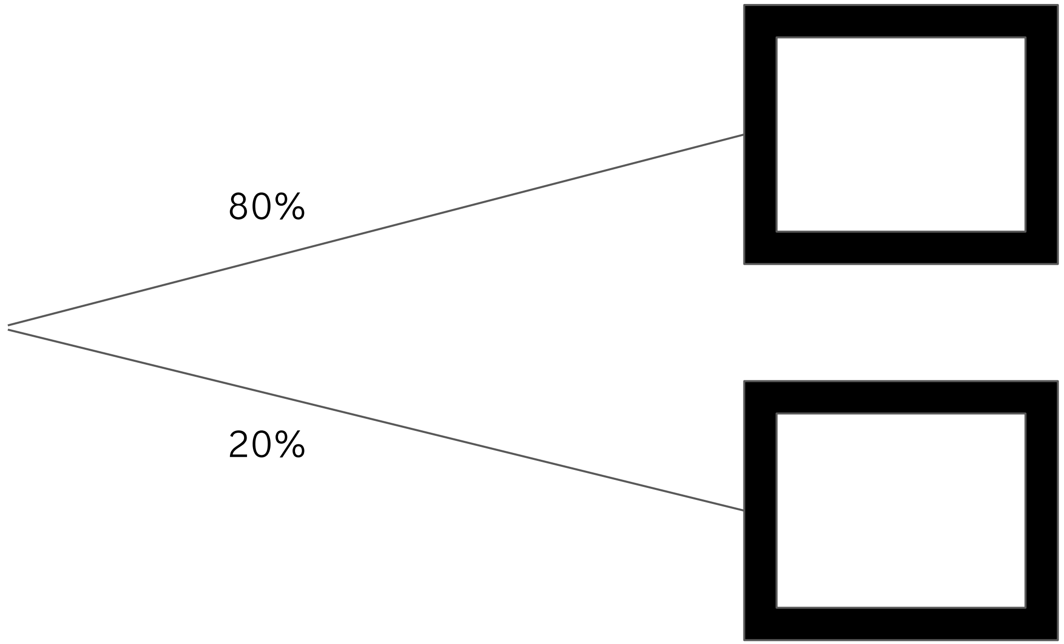
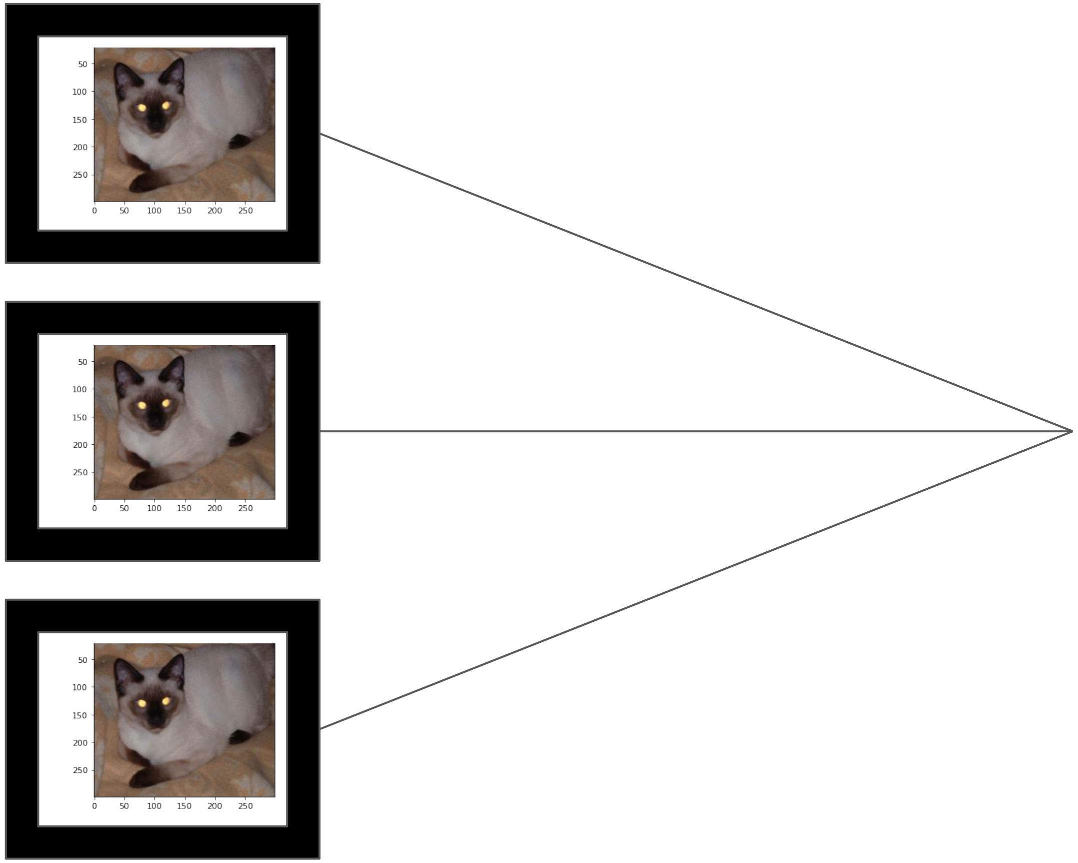
A/B Testing



A/B Testing

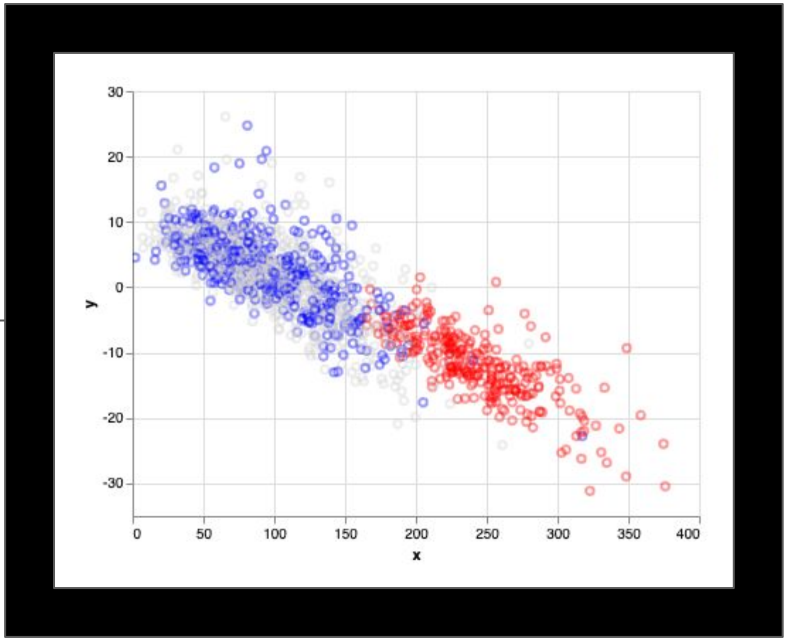


Ensemble



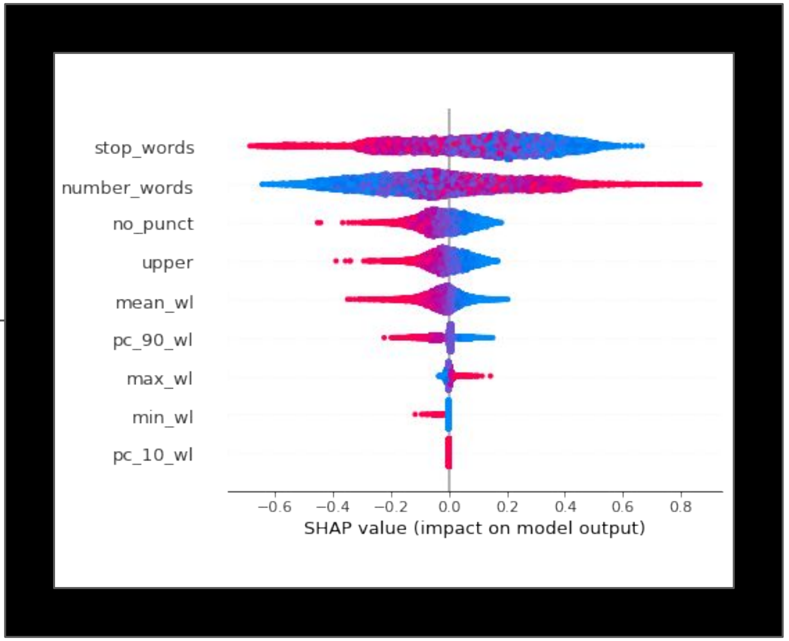
Output: Cat.

Data Drift



Source:
https://github.com/isabelizimm/openshift-ml-workflows-workshop/blob/develop/source/05-data-drift.ipynb

Explainability



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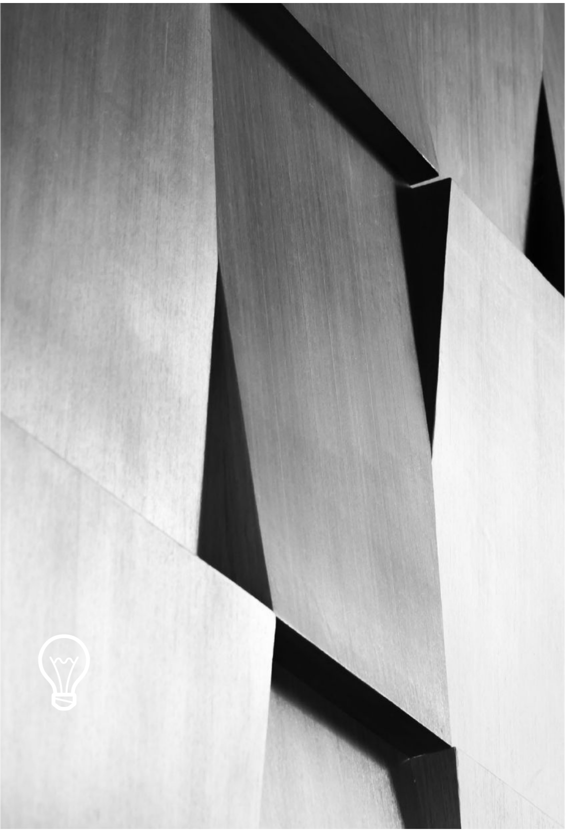
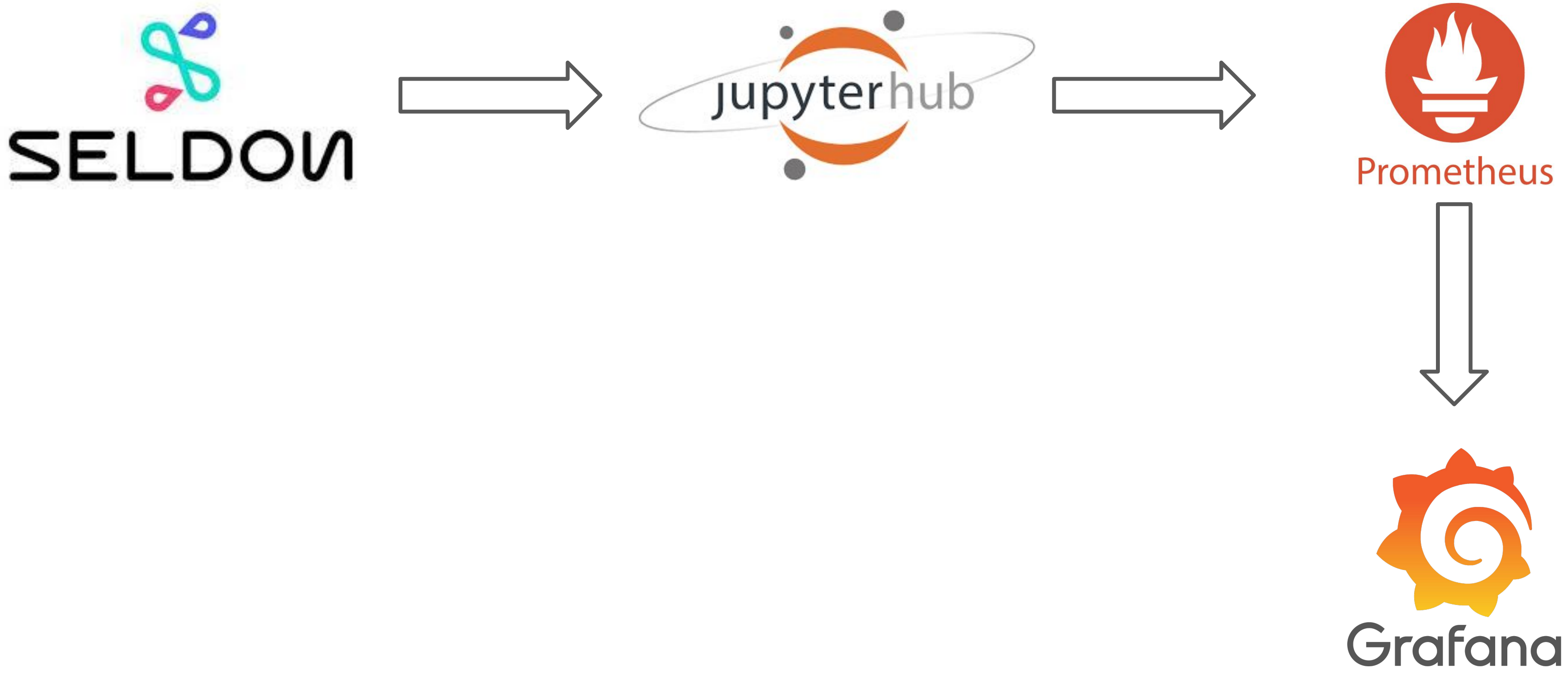
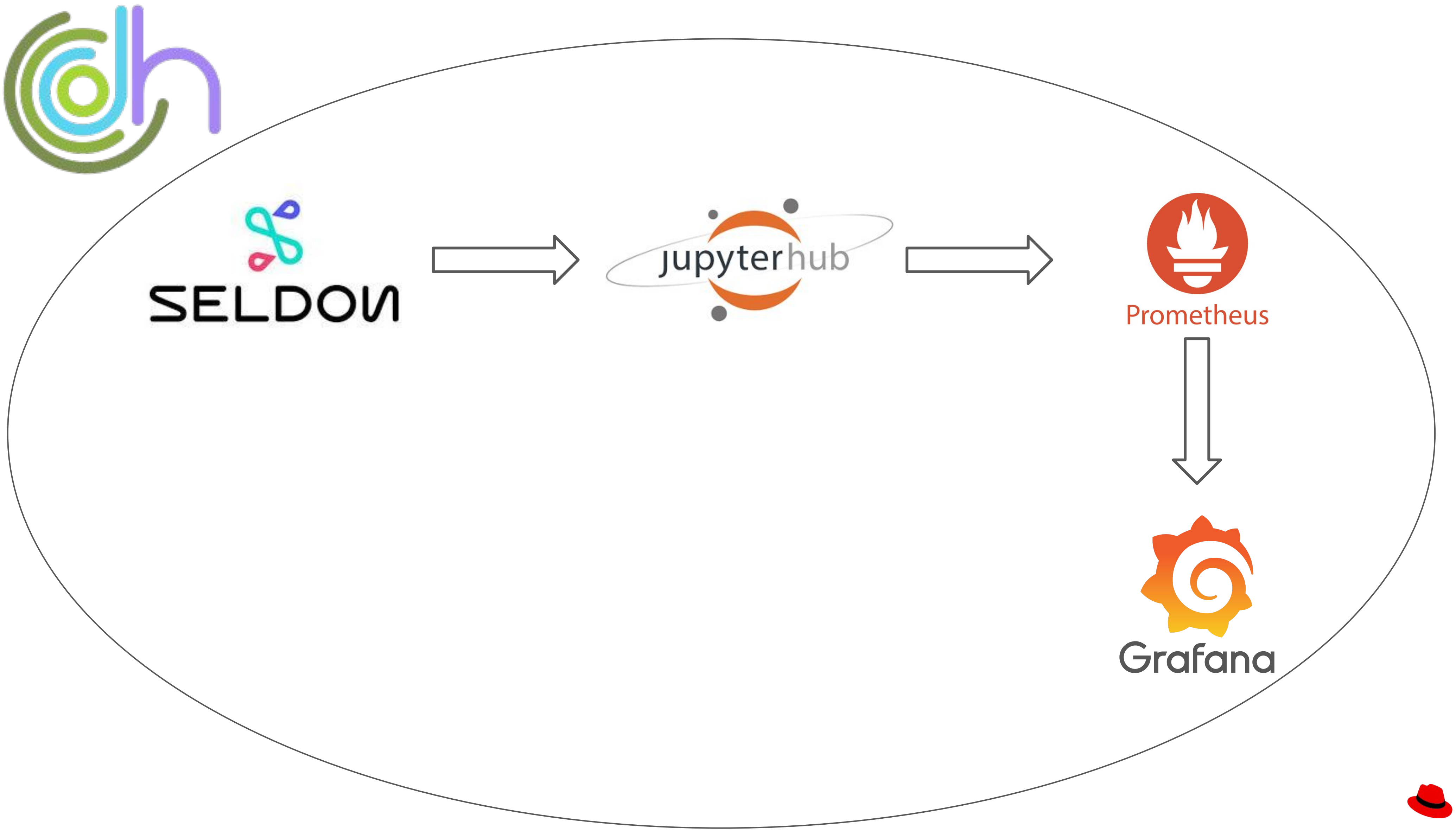


How do I deploy a model?

```yaml
apiVersion: machinelearning.seldon.io/v1
kind: SeldonDeployment
metadata:
  name: image-default
  namespace: seldon
spec:
  name: income
  predictors:
  - graph:
      children: []
      implementation: SKLEARN_SERVER
      modelUri: gs://seldon-models/sklearn/image/model-0.23.2
      name: classifier
    explainer:
      type: AnchorTabular
      modelUri: gs://seldon-models/sklearn/image/explainer-py36-0.5.2
    name: default
     replicas: 1
```

https://docs.seldon.io/projects/seldon-core/en/latest/analytics/explainers.html


SELDON
jupyterhub
Prometheus
Grafana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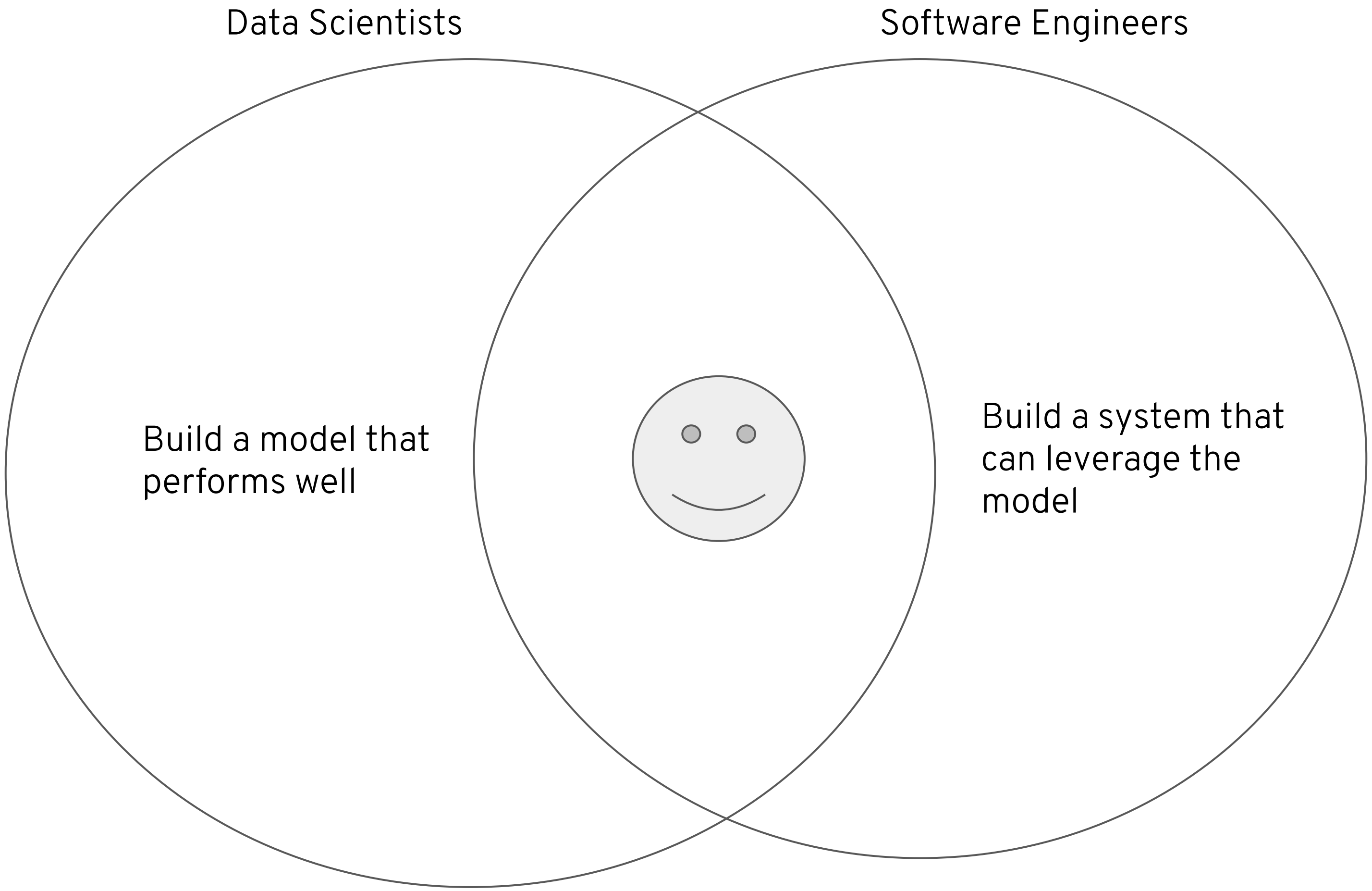
Demo

Do we need model serving?



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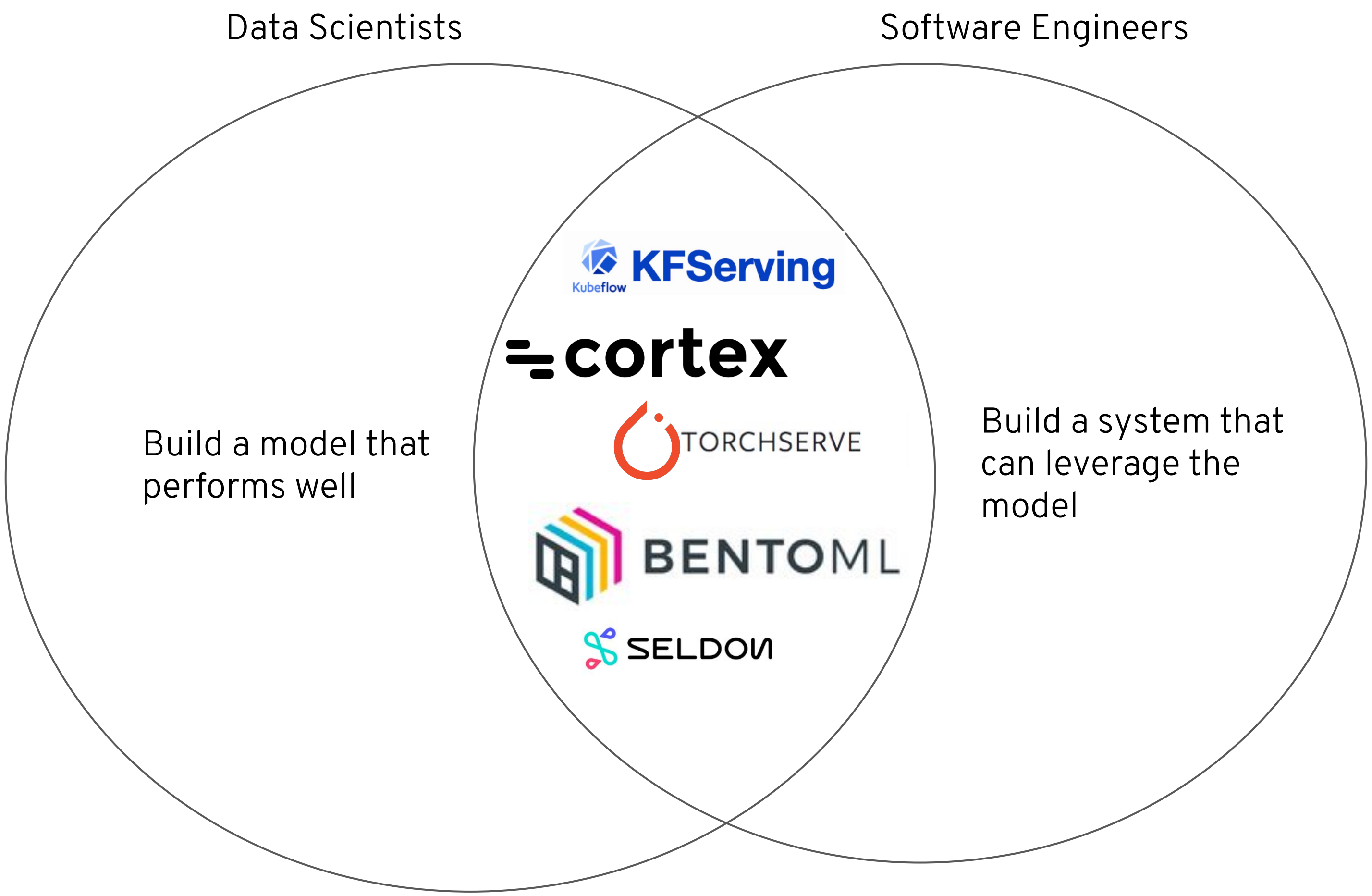

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https://github.com/EthicalML/awesome-production-machine-learning#model-serving-and-monitoring

Stay Connected.

linkedin.com/isabel-zimmerman

twitter.com/isabelizimm