



ShipperHack 2021

Ciptakan Teknologi Smart Warehouse
Terbaikmu dalam 48 Jam

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Why Put Away process and why is it important?

If we misplaced items in the process, then **all** of the next process could be **delayed**. It could cause :

Profit Decrease

If not meet the service level agreements, we might have been given a **penalty**.

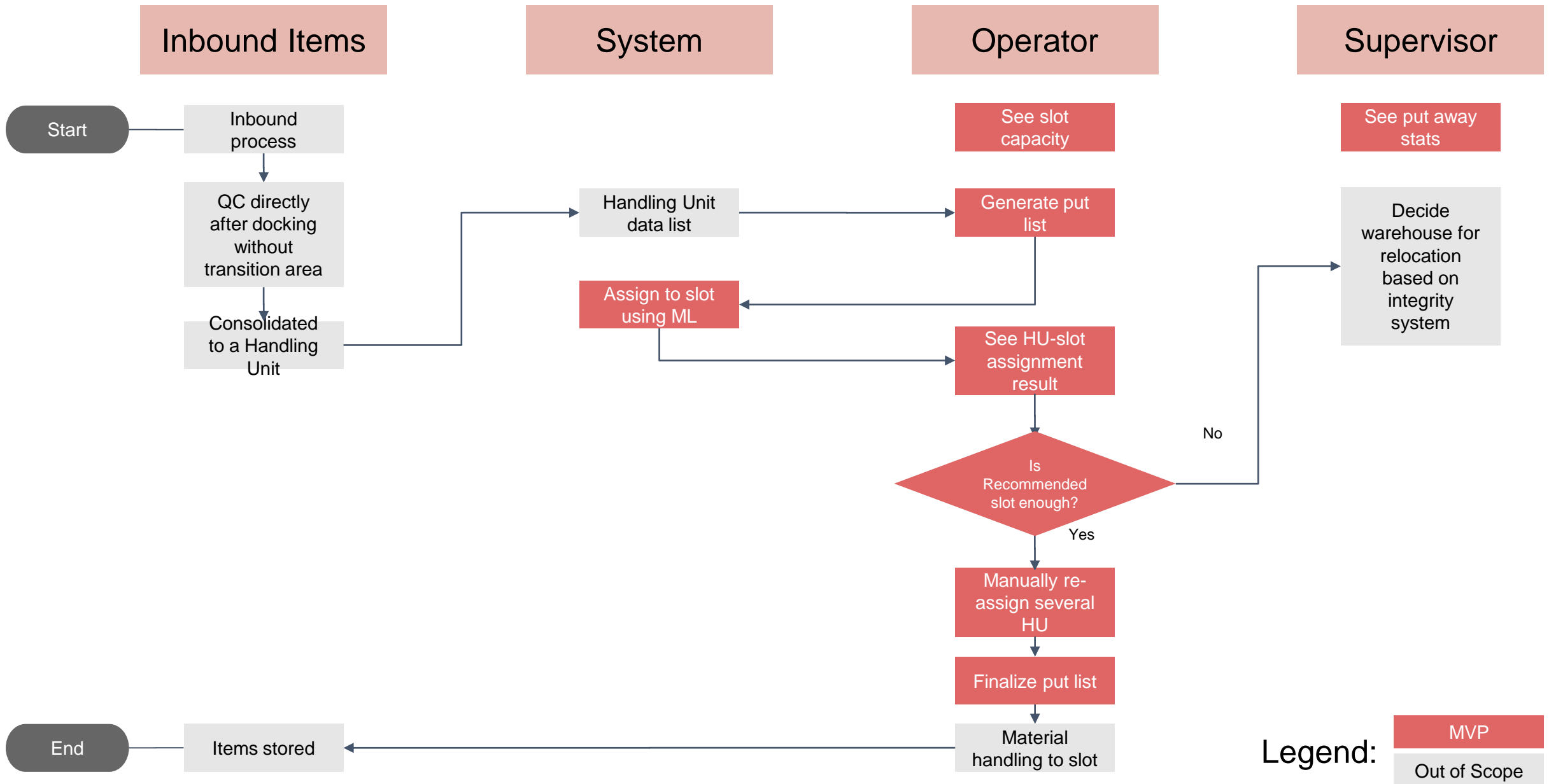
Lost Customer

Delay time could be a reason to **choose another warehouse** company.

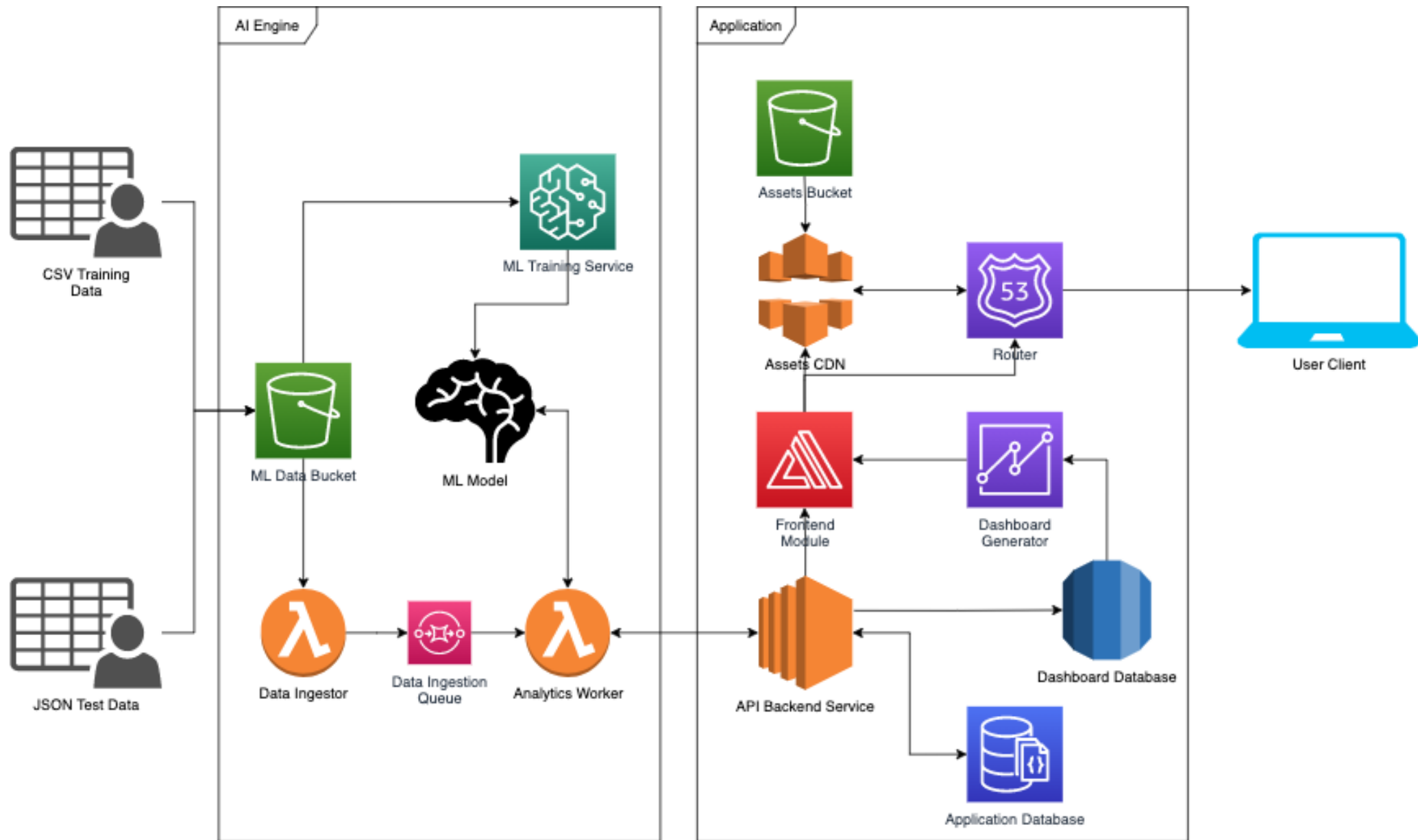
Inefficiency

Delay time might lead to potential over time working that cause higher **HR cost**.

This is how the flow would be



This system Architecture utilizes 10+ AWS Tech Stack



Other Potential Improvement

Scheduling for
warehouse operator

Add bin locations more
detail, even floor must
have ID of bin location

Provide more value to the
client to differentiate our
company with competitor,
such as suggest EOQ,
Safety stock & Expiry
notification

Adding more reasonable
feature to improve
machine learning model

Create dashboard for
monitor inventory
auditing progress

Determine the most
efficient path when
delivery to the 3PL
partners by using Linear
programming

Feature Engineering for Machine Learning Modelling

- **Volume**
- **Weight**
- **Validity duration :**
manufacture date – expired date

Vulnerability Level*

- If the %damage items is $\geq 70\%$, it's very vulnerable (level 3)
- If the %damage items is $< 70\%$ and $\geq 30\%$, it's vulnerable (level 2)
- If the %damage items is $< 30\%$, it's not vulnerable (level 1)

* = the threshold could be adjusted based on business acumen

Appendix: Accuracy of the model

put-away-assigner

Launcher

put-away-shipperhack

SageMakerAutopilotCandidat

EXPERIMENT: PUT-AWAY-SHIPPERHACK

Open candidate generation notebook

Open data explorati

Problem type

MulticlassClassification

Trial

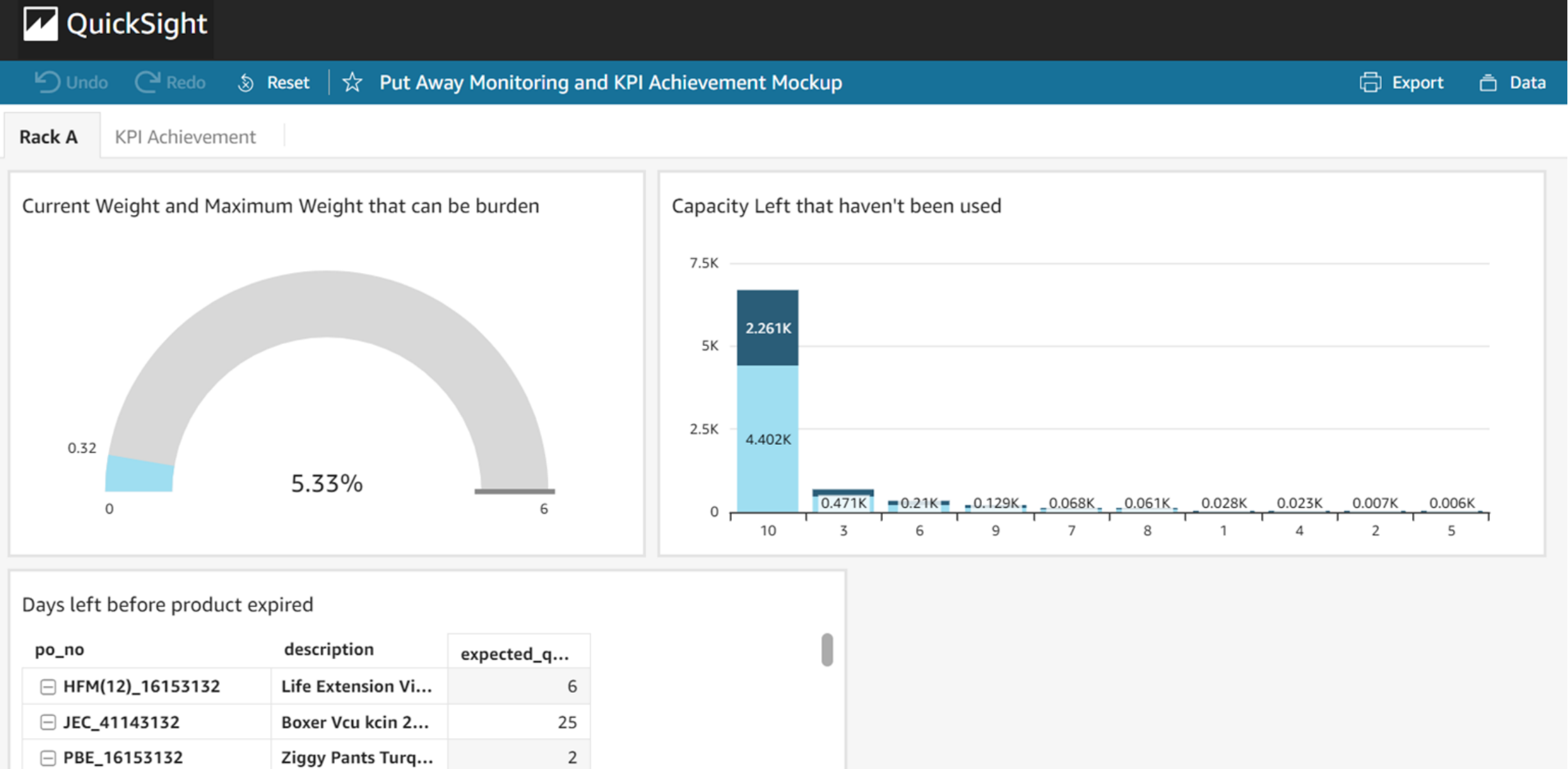
Job profile

TRIALS

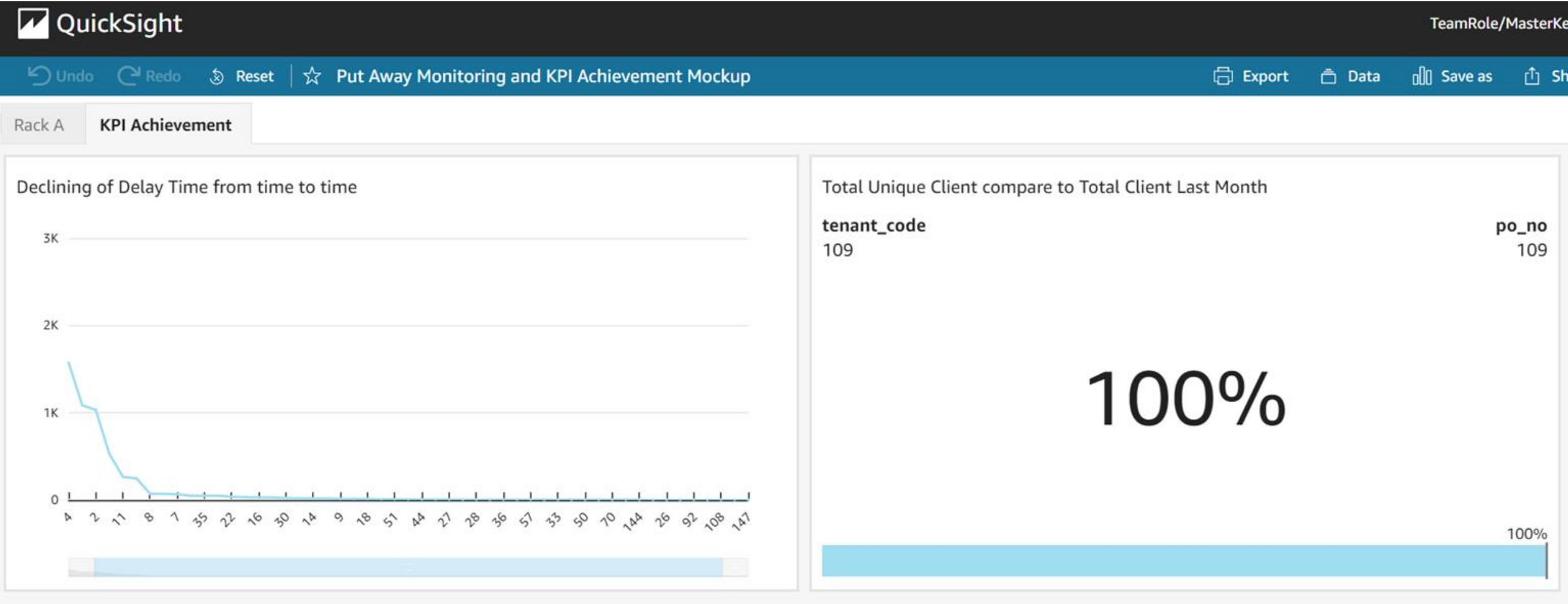
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Trial name	Status	Start time	Objective: Accuracy
★ Best: tuning-job-1-17ad96ea4122...	Completed	1 hour ago	0.949720025062561

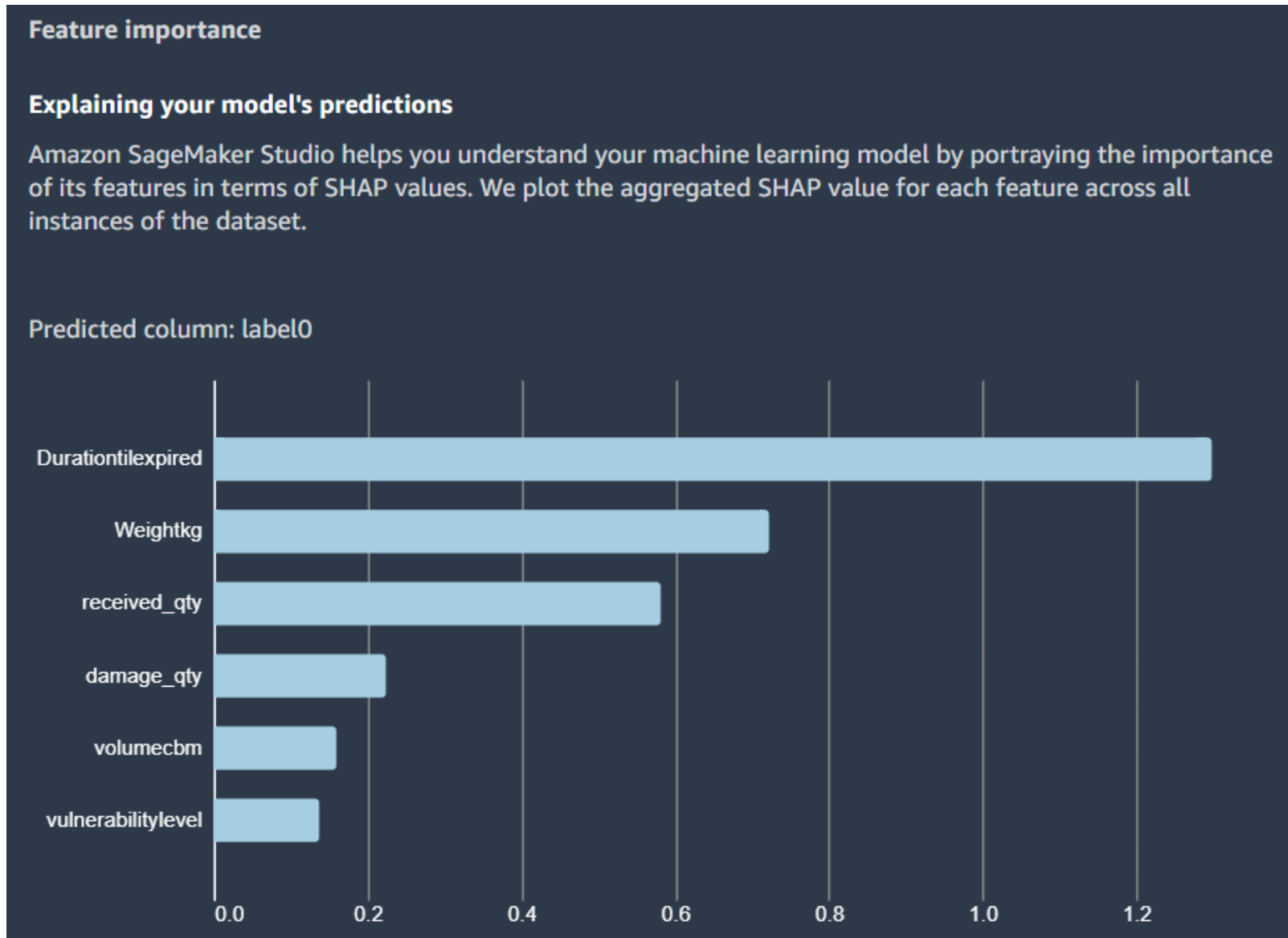
Appendix: Dashboard



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Appendix: Feature Importance of the Case





ShipperHack 2021

9-11 April 2021

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Thank you!

