

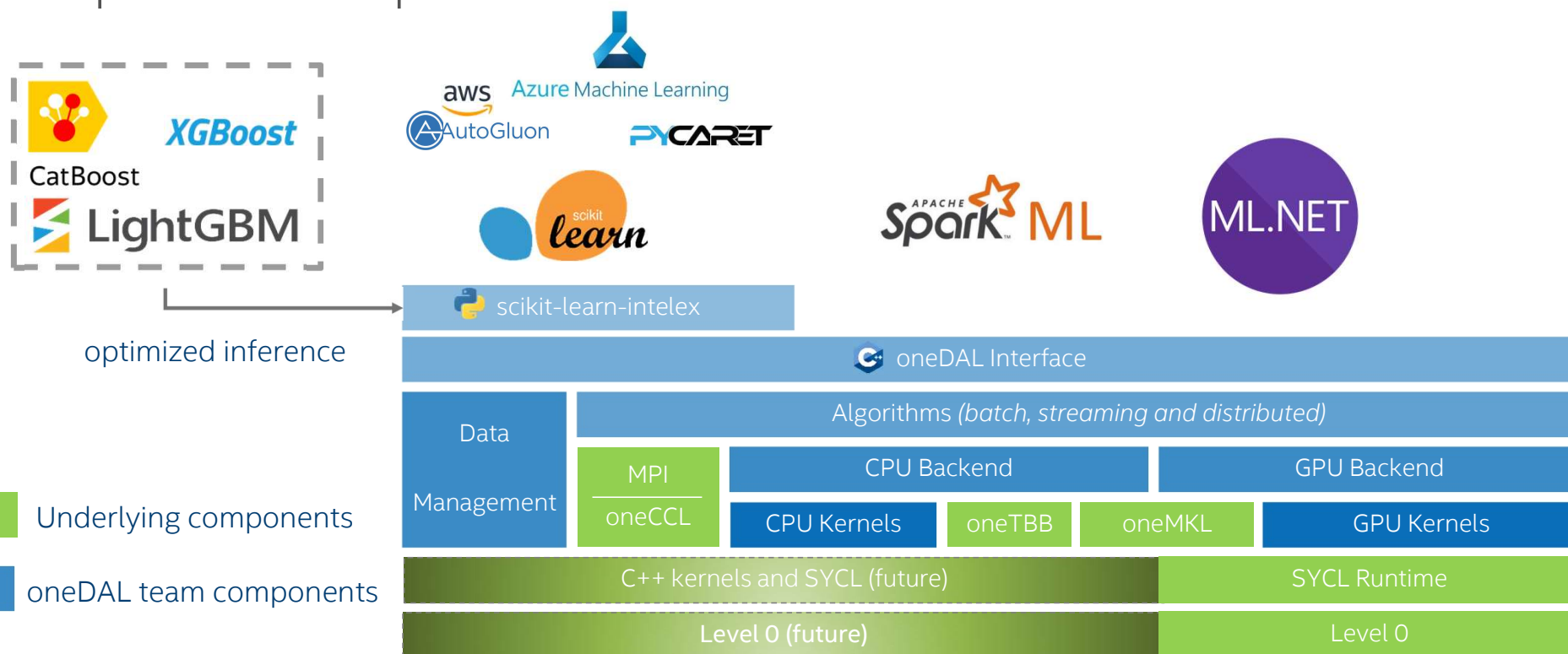
# oneDAL scikit-learn-intelex migration to UXL

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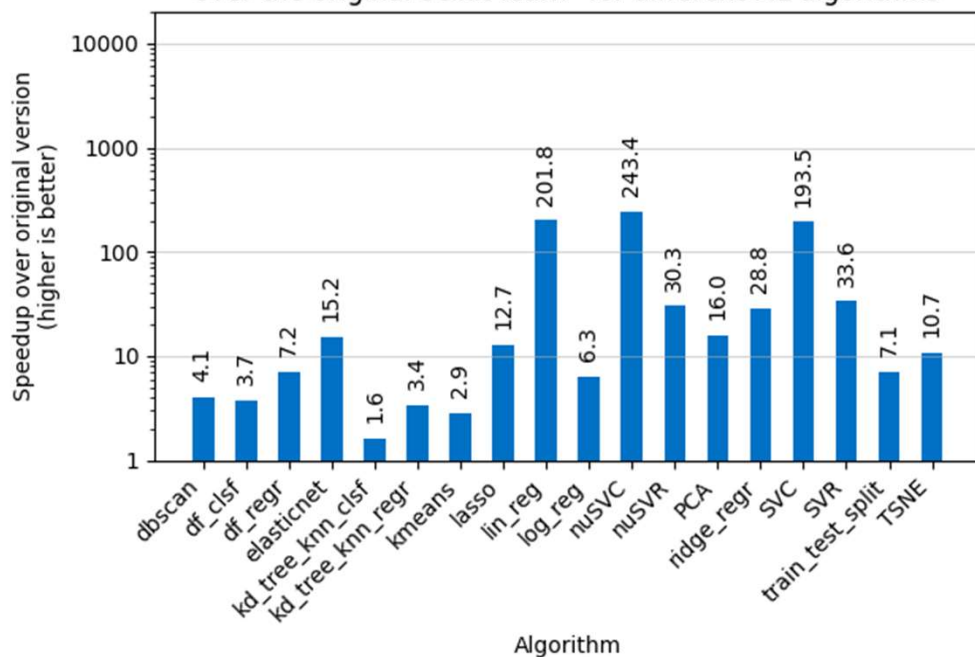
# oneDAL and scikit-learn-intelex

10-100x acceleration of top ML packages & algos, numerically equivalent & reproducible

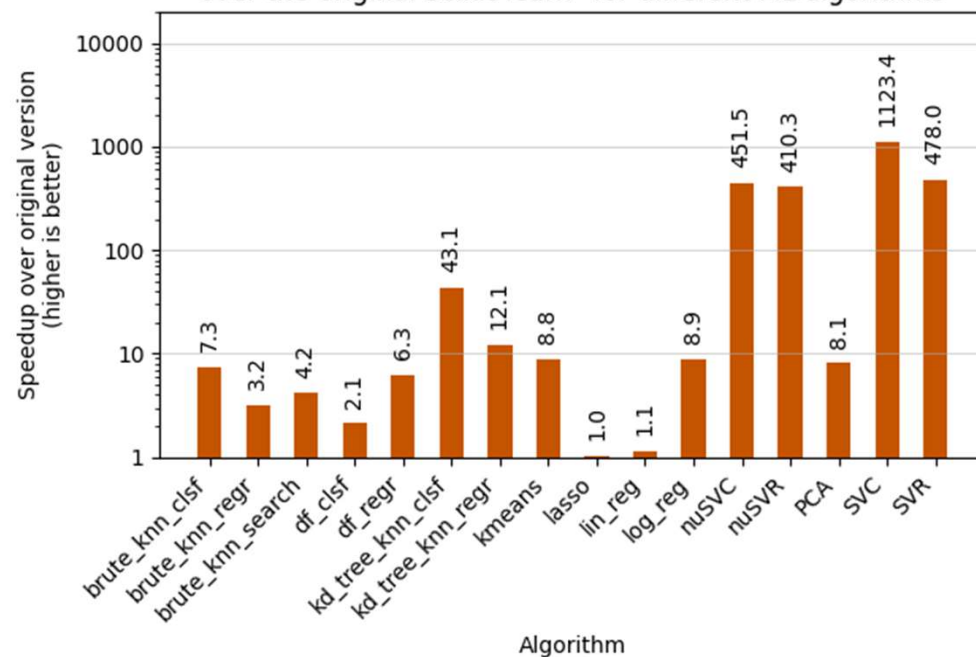


# Intel® Extension for Scikit-Learn Performance on SPR compared to original Scikit-Learn (Training & Inference)

Training speedup of Intel® Extension for Scikit-learn\* over the original Scikit-learn\* for different ML algorithms



Inference speedup of Intel® Extension for Scikit-learn\* over the original Scikit-learn\* for different ML algorithms



**Configuration Details and Workload Setup:** bare metal (2.0 GHz Intel Xeon Platinum 8480+, two sockets, 56 cores per socket), 512 GB DDR5 4800MT/s, Python 3.10, scikit-learn 1.2.0, scikit-learn-intelx 2023.0.1.

# Intel® Extension for Scikit-learn

## Common Scikit-learn

```
from sklearn.svm import SVC

X, Y = get_dataset()

clf = SVC().fit(X, y)
res = clf.predict(X)
```

## Scikit-learn mainline

## Scikit-learn with Intel CPU opts

```
from sklearnex import patch_sklearn
patch_sklearn()

from sklearn.svm import SVC

X, Y = get_dataset()

clf = SVC().fit(X, y)
res = clf.predict(X)
```

## Available through Anaconda and PyPI:

- `conda install scikit-learn-intelex`
- `conda install -c conda-forge scikit-learn-intelex`
- `pip install scikit-learn-intelex`

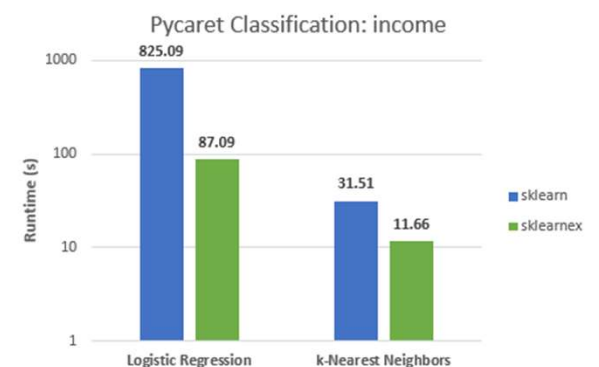
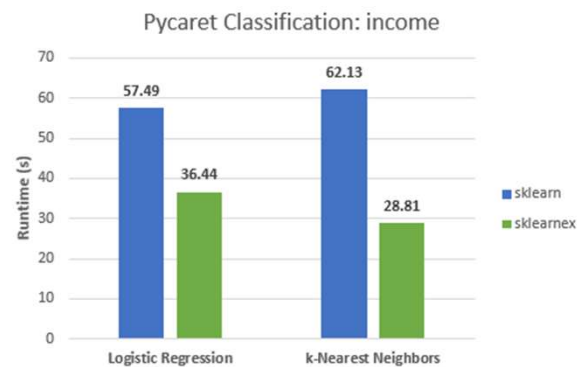
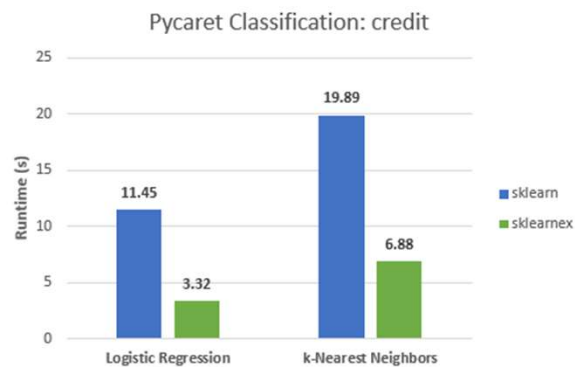
Same Code,  
Same Behavior

 PASSED

- Scikit-learn, not scikit-learn-like
- Scikit-learn conformance (mathematical equivalence) defined by Scikit-learn Consortium, continuously vetted by public CI

# PyCaret AutoML acceleration

Low-code auto ML with full sklearnex regression, classification, and clustering support



# Scikit-learn-intelex migration

## Migration to UXL

- Documentation/branding changes to align with UXL vs Intel product
- Migration to UXL github org alongside oneDAL by end of the year

## Positioning and announcement

- Although scikit-learn-intelex exist as standalone product it solely depend on oneDAL and considered par of broader oneDAL project
- No plans for broad announcement

# Open questions?

## Package/repository naming

- Package and repo name contain “intel” as part of the name
- Current migration to UXL would be completed with existing name
- New name and plan for migration would be discussed separately

# Thanks

