Development dynamics & prospects
Development dynamics
Scikit-learn: the vision

• Democratizing « machine learning »
  Mathematical building blocks of AI
  Accessible beyond mathematicians and computer scientists

• A tool also for production
  Avoid oversimplification: we target a technical audience
  Quality software engineering

• Open source
10 years

2009
v0.1, released by researchers at Inria

2011
1st international sprint

2009 SVM kNN Modèles linéaires Clustering
2010 v0.1 Random Forest
2011 v0.8
2012 v0.10
2013 v0.13
2014 v0.15
2015 v0.17
2016 v0.18
2017 v0.19
2018 v0.20

2010-2018

2017 ODSC price for best tool
Open Data Science Conference

2010-2017

kNN Clustering
SVM Random Forest
Gradient Boosting
Détection d'anomalie
Données sparses
Vitesse
Parallélisme
Sélection de modèle
Données catégorielles
Calcul distribué
10 years

Monthly website traffic
A large impact

>500,000 active users

12,000 academic citations

- Windows
- Mac
- Linux

- Academic
- Industrial
- Other
Community-driven development

Monthly active contributeurs

2010 2012 2014 2016 2018

0 25 50
Community-driven development

Contributor’s activity

A few very active people

Many occasional contributors
A professional core

Paid to work on the project (2018):
- Inria:
  - O. Grisel
  - J. du Boisberranger
  - G. Lemaître (50%)
  - J. van den Bossche (50%)
- Columbia:
  - A. Mueller (50%)
  - stagiaires
- Sydney university:
  - J. Nohman (50%)

Public research money
Scikit-learn @ fondation Inria

Mix community-driven development with industrial interest

• Goals: stimulate the development of scikit-learn
• Mixte governance between community and sponsors
  • Keep the energy and the confidence of the community
  • Take strategic recommendations from the industry

Sponsoring
Development prospects
Scikit-learn, new ambitions

Interpretability & understanding
• Model interpretation
• Confidence

Data integration
• Missing data
• Categorical values

Scaling up
• Distributed computing
• Vendor accelerations

More frequent versions
Thanks to our partners