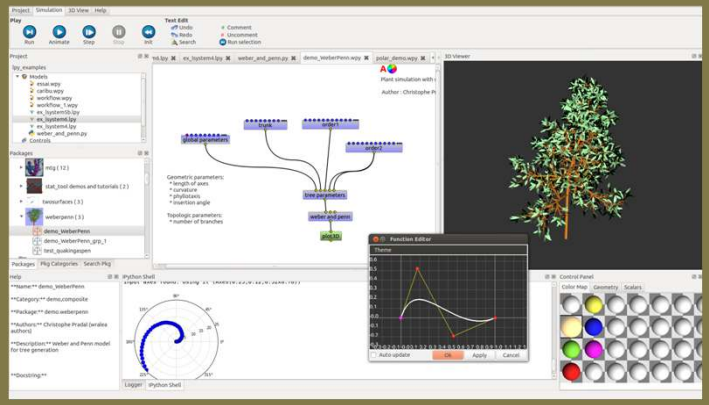
OpenAleaLab

An Open-source multi-language software environment for modeling morphogenesis

- Build projects combining different modeling paradigms and languages
- Access state-of-the-art toolboxes dedicated to plant modeling
- Share with the OpenAlea modeling community



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Extensions

- ☐ Plant modeling
- ☐ Tissue modeling

Modeling paradigms

- ☐ BlackBoards
- ☐ L-systems
- ☐ Visual Programming
- ☐ Cellular automata

Languages

- ☐ Python
- ☐ L-Py
- ☐ Visualea
- ☐ R
- ☐ Sketching

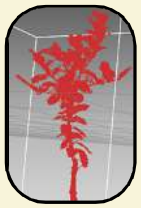
Toolboxes

- ☐ Phenotyping
- ☐ Analyzing
- ☐ Modeling
- ☐ Simulating
- ☐ Assessing

Databases

- ☐ Manual digitizing
- ☐ 3-D Laser scans
- ☐ 2-D Photos
- ☐ Laser microscopy

Reconstruct digitized plants



Built on python IPython NumPy SciPy matplotlib R

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news3

news2

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Development

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Funding

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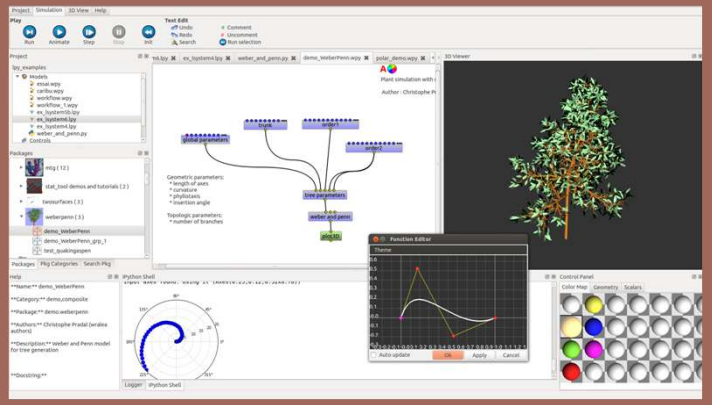

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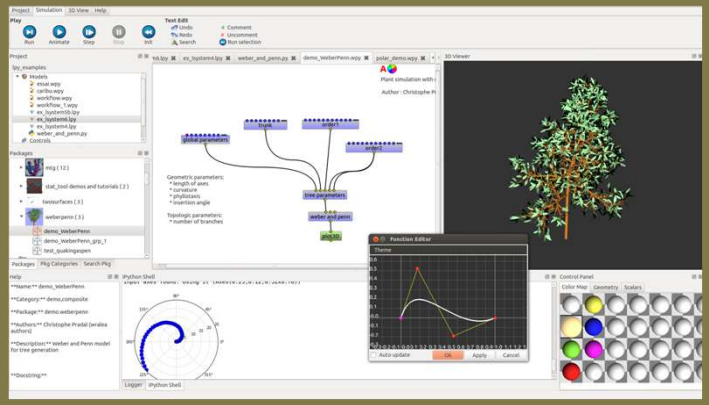

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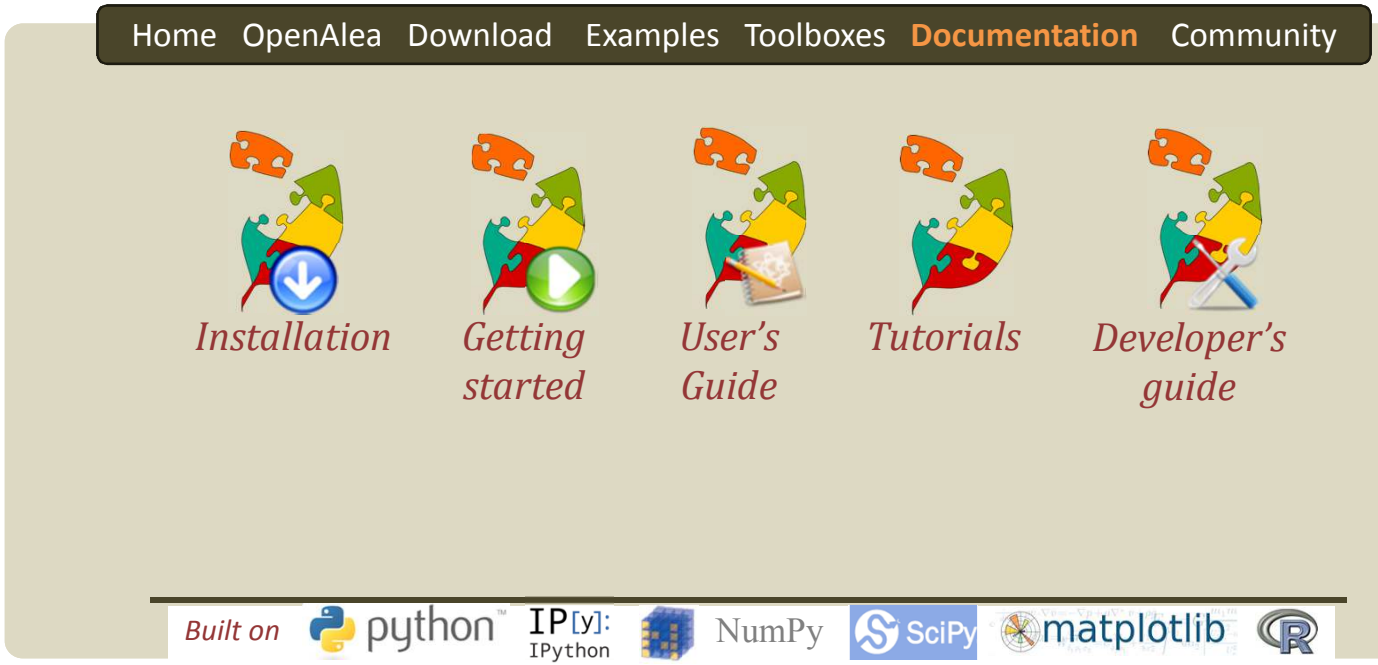

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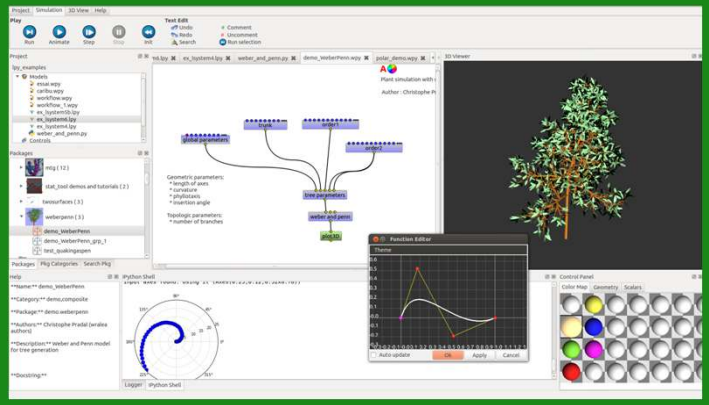

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Toolboxes

- ☐ Sequences
- ☐ Trees
- ☐ MTGs
- ☐ Light
- ☐ ScanRoot

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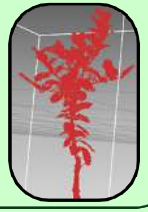

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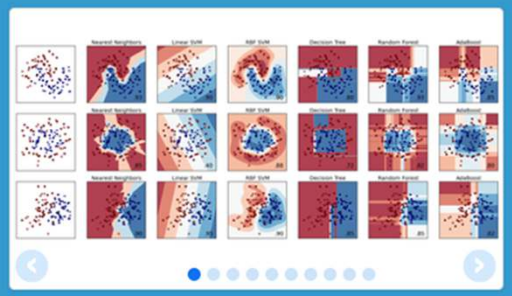

OpenAleaLab

A multi-language software environment for modeling plants

- Built on NumPy, SciPy, and matplotlib
- Open source, commercially usable - BSD license

Classification

Identifying to which set of categories a new observation belong to.

Applications: Spam detection, Image recognition.
Algorithms: *SVM*, *nearest neighbors*, *random forest*, ... — *Examples*

Regression

Predicting a continuous value for a new example.

Applications: Drug response, Stock prices.
Algorithms: *SVR*, *ridge regression*, *Lasso*, ... — *Examples*

Clustering

Automatic grouping of similar objects into sets.

Applications: Customer segmentation, Grouping experiment outcomes
Algorithms: *k-Means*, *spectral clustering*, *mean-shift*, ... — *Examples*

Dimensionality reduction

Reducing the number of random variables to consider.

Applications: Visualization, Increased efficiency
Algorithms: *PCA*, *feature selection*, *non-negative matrix factorization*. — *Examples*

Model selection

Comparing, validating and choosing parameters and models.

Goal: Improved accuracy via parameter tuning
Modules: *grid search*, *cross validation*, *metrics*. — *Examples*

Preprocessing

Feature extraction and normalization.

Application: Transforming input data such as text for use with machine learning algorithms.
Modules: *preprocessing*, *feature extraction*. — *Examples*

News

On-going development: What's new (changelog)

August 2014. scikit-learn 0.15.1 is available for download (Changelog).

July 2014. scikit-learn 0.15.0 is available for download (Changelog).

July 14-20th, 2014: international sprint. During this week-long sprint, we gathered 18 of the core contributors in Paris. We want to thank our sponsors: Paris-Saclay Center for Data Science & Digicosme and our hosts La Paillasse, Criteo, Inria, and tinyclues.

August 2013. scikit-learn 0.14 is available for download (Changelog).

Community

About us See authors # scikit-learn

Questions? See stackoverflow # scikit-learn

Mailing list: scikit-learn-general@lists.sourceforge.net

IRC: #scikit-learn @ freenode

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Who uses scikit-learn?

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"scikit-learn makes doing advanced analysis in Python accessible to anyone."

More testimonials

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