

Systems Note 25

Mayavi package in Jupyter on Apple

Hardware - Intel Mac mini (2018)

OS - macOS Catalina 10.15.6

uname -a gives Darwin 19.6.0 Jul 5 2020 xnu-6153.141.1~9/RELEASE_X86_64

In Terminal to enter pyenv version created in Note14

cd ~/jn_production

To enter the environment created in Note 15

pipenv shell

brew install gnuplot installs vtk

pipenv install QtPy Pyface wxPython PySide2 PyQt5 traits traitsui

git clone <https://github.com/enthought/mayavi.git> (Version 4.7.1 at install time)

cd mayavi

pipenv install -r requirements.txt

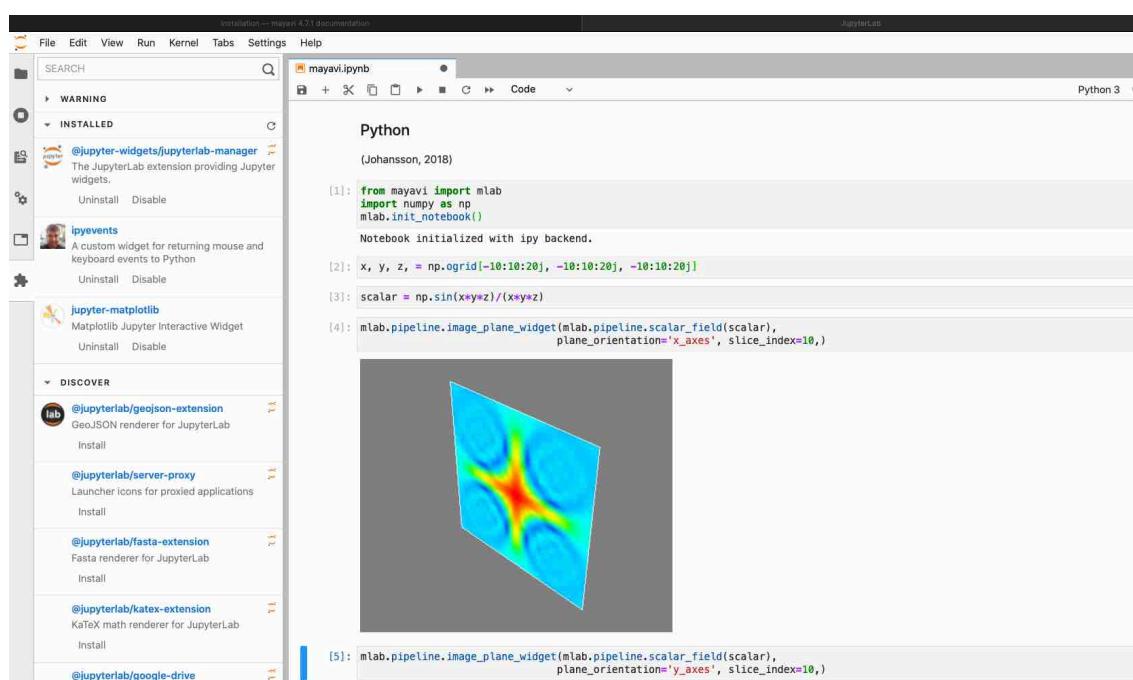
python setup.py install

jupyter nbextension install --py mayavi --user

jupyter nbextension enable --py mayavi --user

pipenv install ipyevents

jupyter-lab



The screenshot shows a JupyterLab interface with a sidebar containing extension management and a main notebook area. The notebook cell [1] imports Mayavi, NumPy, and initializes the notebook. The cell [2] creates a 3D grid. The cell [3] defines a scalar function. The cell [4] creates a 3D surface plot using Mayavi's pipeline and image_plane_widget. The resulting 3D surface plot is displayed in the main area, showing a complex, multi-lobed pattern.

```
[1]: from mayavi import mlab
import numpy as np
mlab.init_notebook()

Notebook initialized with ipy backend.

[2]: x, y, z = np.ogrid[-10:10:20j, -10:10:20j, -10:10:20j]

[3]: scalar = np.sin(x*y*z)/(x*y*z)

[4]: mlab.pipeline.image_plane_widget(mlab.pipeline.scalar_field(scalar),
plane_orientation='x_axes', slice_index=10,)

[5]: mlab.pipeline.image_plane_widget(mlab.pipeline.scalar_field(scalar),
plane_orientation='y_axes', slice_index=10,)
```