win10 pyvista以及pysdf安装

pyvista安装

操作系统：win10 22H2

安装参考文档：https://docs.pyvista.org/getting-started/installation.html#source-developers

安装步骤：

1. 下载Anaconda，并配置好一个带python3.7的环境，假设该环境名叫**py37**
2. 执行 **conda activate py37**，切换到该python3.7的环境
3. 执行以下命令开始安装

```shell
git clone https://github.com/pyvista/pyvista.git
cd pyvista
python -m pip install -e .
```

安装过程输出信息如下

```
PS D:\python_project\pyvista> python -m pip install -e .
Obtaining file:///D:/python_project/pyvista
  Installing build dependencies ... done
  Checking if build backend supports build_editable ... done
  Getting requirements to build editable ... done
  Installing backend dependencies ... done
  Preparing editable metadata (pyproject.toml) ... done
Requirement already satisfied: pillow in d:\miniconda3\lib\site-packages (from pyvista==0.38.dev0) (9.3.0)
Requirement already satisfied: numpy in d:\miniconda3\lib\site-packages (from pyvista==0.38.dev0) (1.21.6)
Requirement already satisfied: typing-extensions in d:\miniconda3\lib\site-packages (from pyvista==0.38.dev0) (4.4.0)
Collecting imageio
  Downloading imageio-2.23.0-py3-none-any.whl (3.4 MB)
     ━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━ 3.4/3.4 MB 4.3 MB/s eta 0:00:00
Collecting pooch
  Downloading pooch-1.6.0-py3-none-any.whl (56 kB)
     ━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━ 56.3/56.3 kB ? eta 0:00:00
```

```
Collecting vtk
  Downloading vtk-9.2.2-cp37-cp37m-win_amd64.whl (48.8 MB)
     ━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━ 48.8/48.8 MB 1.2 MB/s eta 0:00:00
Collecting scooby>=0.5.1
  Downloading scooby-0.7.0-py3-none-any.whl (16 kB)
Requirement already satisfied: requests>=2.19.0 in d:\miniconda3\lib\site-packages (from pooch->pyvista==0.38.dev0) (2.27.1)
Collecting appdirs>=1.3.0
  Downloading appdirs-1.4.4-py2.py3-none-any.whl (9.6 kB)
Requirement already satisfied: packaging>=20.0 in d:\miniconda3\lib\site-packages (from pooch->pyvista==0.38.dev0) (21.3)
Collecting wslink>=1.0.4
  Downloading wslink-1.10.0-py3-none-any.whl (28 kB)
Requirement already satisfied: matplotlib>=2.0.0 in d:\miniconda3\lib\site-packages (from vtk->pyvista==0.38.dev0) (3.5.3)
Requirement already satisfied: pyparsing>=2.2.1 in d:\miniconda3\lib\site-packages (from matplotlib>=2.0.0->vtk->pyvista==0.38.dev0) (3.0.9)
Requirement already satisfied: python-dateutil>=2.7 in d:\miniconda3\lib\site-packages (from matplotlib>=2.0.0->vtk->pyvista==0.38.dev0) (2.8.2)
Requirement already satisfied: cycler>=0.10 in d:\miniconda3\lib\site-packages (from matplotlib>=2.0.0->vtk->pyvista==0.38.dev0) (0.11.0)
Requirement already satisfied: fonttools>=4.22.0 in d:\miniconda3\lib\site-packages (from matplotlib>=2.0.0->vtk->pyvista==0.38.dev0) (4.38.0)
Requirement already satisfied: kiwisolver>=1.0.1 in d:\miniconda3\lib\site-packages (from matplotlib>=2.0.0->vtk->pyvista==0.38.dev0) (1.4.4)
Requirement already satisfied: idna<4,>=2.5 in d:\miniconda3\lib\site-packages (from requests>=2.19.0->pooch->pyvista==0.38.dev0) (3.3)
Requirement already satisfied: charset-normalizer~=2.0.0 in d:\miniconda3\lib\site-packages (from requests>=2.19.0->pooch->pyvista==0.38.dev0) (2.0.4)
Requirement already satisfied: certifi>=2017.4.17 in d:\miniconda3\lib\site-packages (from requests>=2.19.0->pooch->pyvista==0.38.dev0) (2022.9.24)
Requirement already satisfied: urllib3<1.27,>=1.21.1 in d:\miniconda3\lib\site-packages (from requests>=2.19.0->pooch->pyvista==0.38.dev0) (1.26.8)
Collecting aiohttp<4
  Downloading aiohttp-3.8.3-cp37-cp37m-win_amd64.whl (322 kB)
     ━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━ 322.1/322.1 kB 6.6 MB/s eta 0:00:00
Collecting multidict<7.0,>=4.5
  Downloading multidict-6.0.3-cp37-cp37m-win_amd64.whl (27 kB)
Collecting aiosignal>=1.1.2
  Downloading aiosignal-1.3.1-py3-none-any.whl (7.6 kB)
Collecting attrs>=17.3.0
  Downloading attrs-22.1.0-py2.py3-none-any.whl (58 kB)
Collecting frozenlist>=1.1.1
  Downloading frozenlist-1.3.3-cp37-cp37m-win_amd64.whl (34 kB)
```

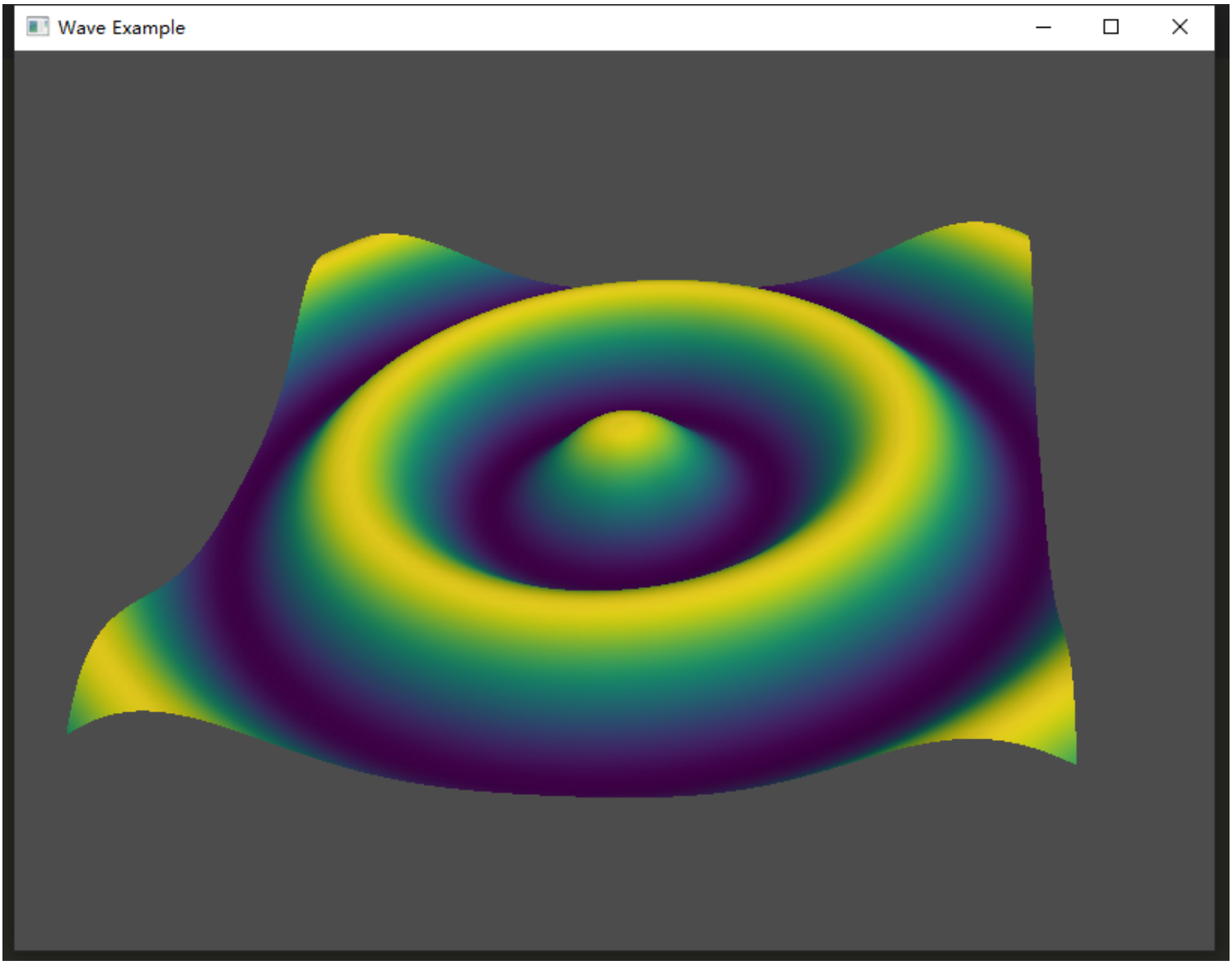
```
Collecting asynctest==0.13.0
  Downloading asynctest-0.13.0-py3-none-any.whl (26 kB)
Collecting yarl<2.0,>=1.0
  Downloading yarl-1.8.2-cp37-cp37m-win_amd64.whl (56 kB)
     ━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━ 56.4/56.4 kB 2.9 MB/s eta 0:00:00
Collecting async-timeout<5.0,>=4.0.0a3
  Downloading async_timeout-4.0.2-py3-none-any.whl (5.8 kB)
Requirement already satisfied: six>=1.5 in d:\miniconda3\lib\site-packages (from python-dateutil>=2.7->matplotlib>=2.0.0->vtk->pyvista==0.38.dev0) (1.16.0)
Building wheels for collected packages: pyvista
  Building editable for pyvista (pyproject.toml) ... done
  Created wheel for pyvista: filename=pyvista-0.38.dev0-0.editable-py3-none-any.whl size=8061 sha256=9dac506e1ce9acc6faaed7af30a8c0ce72cdbd587b572c09c4acfe651d976161
  Stored in directory: C:\Users\hesensen\AppData\Local\Temp\pip-ephem-wheel-cache-detqb78f\wheels\f6\96\9d\6e4da1149f2cfa80492c5191e50c7bcd999a0103294c33d0d2
Successfully built pyvista
Installing collected packages: appdirs, scooby, multidict, imageio, frozenlist, attrs, asynctest, async-timeout, yarl, pooch, aiosignal, aiohttp, wslink, vtk, pyvista
Successfully installed aiohttp-3.8.3 aiosignal-1.3.1 appdirs-1.4.4 async-timeout-4.0.2 asynctest-0.13.0 attrs-22.1.0 frozenlist-1.3.3 imageio-2.23.0 multidict-6.0.3 pooch-1.6.0 pyvista-0.38.dev0 scooby-0.7.0 vtk-9.2.2 wslink-1.10.0 yarl-1.8.2
```

4. 执行如下测试命令

</> Shell | 收起

```
from pyvista import demos
demos.plot_wave()
```

然后就会出现一个窗口展示动态的3D图形



展示完毕后终端会输出一串值

```
pyvista_ndarray([[-10.        , -10.        ,   0.98399561],
                 [-10.        ,  -9.75      ,   0.93771343],
                 [-10.        ,  -9.5       ,   0.86373032],
                 ...,
                 [  9.75      ,   9.25      ,   0.63591327],
                 [  9.75      ,   9.5       ,   0.75944828],
                 [  9.75      ,   9.75      ,   0.86143754]])
```

pysdf安装

1. 安装Visual Studio C++ build tools，https://visualstudio.microsoft.com/zh-hans/visual-cpp-build-tools/，下载好后选择“使用C++的桌面开发”，然后再选择好安装目录进行安装（建议安装到非C盘）。

2. 安装完毕后重启一下电脑
3. 进入conda环境，执行 **conda activate py37**
4. 安装pysdf，执行 **pip install pysdf**，安装过程输出信息如下

```
(paddle) D:\python_project\PaddleClas>pip install pysdf
Collecting pysdf
  Using cached pysdf-0.1.8.tar.gz (46 kB)
  Preparing metadata (setup.py) ... done
Building wheels for collected packages: pysdf
  Building wheel for pysdf (setup.py) ... done
  Created wheel for pysdf: filename=pysdf-0.1.8-cp37-cp37m-win_amd64.whl size=124673 sha256=cd993b80a9f34965718bf68df08113a9778d0ace9d4499a2a21e4baab78f9c36
  Stored in directory: c:\users\hesensen\appdata\local\pip\cache\wheels\ea\7b\43\ccd2d5074f2257646e5483ab197c82c0f3edc1a24d3e7ae574
Successfully built pysdf
Installing collected packages: pysdf
Successfully installed pysdf-0.1.8
```

参考资料

https://blog.csdn.net/weixin_42277380/article/details/126231762

https://docs.pyvista.org/getting-started/installation.html#source-developers