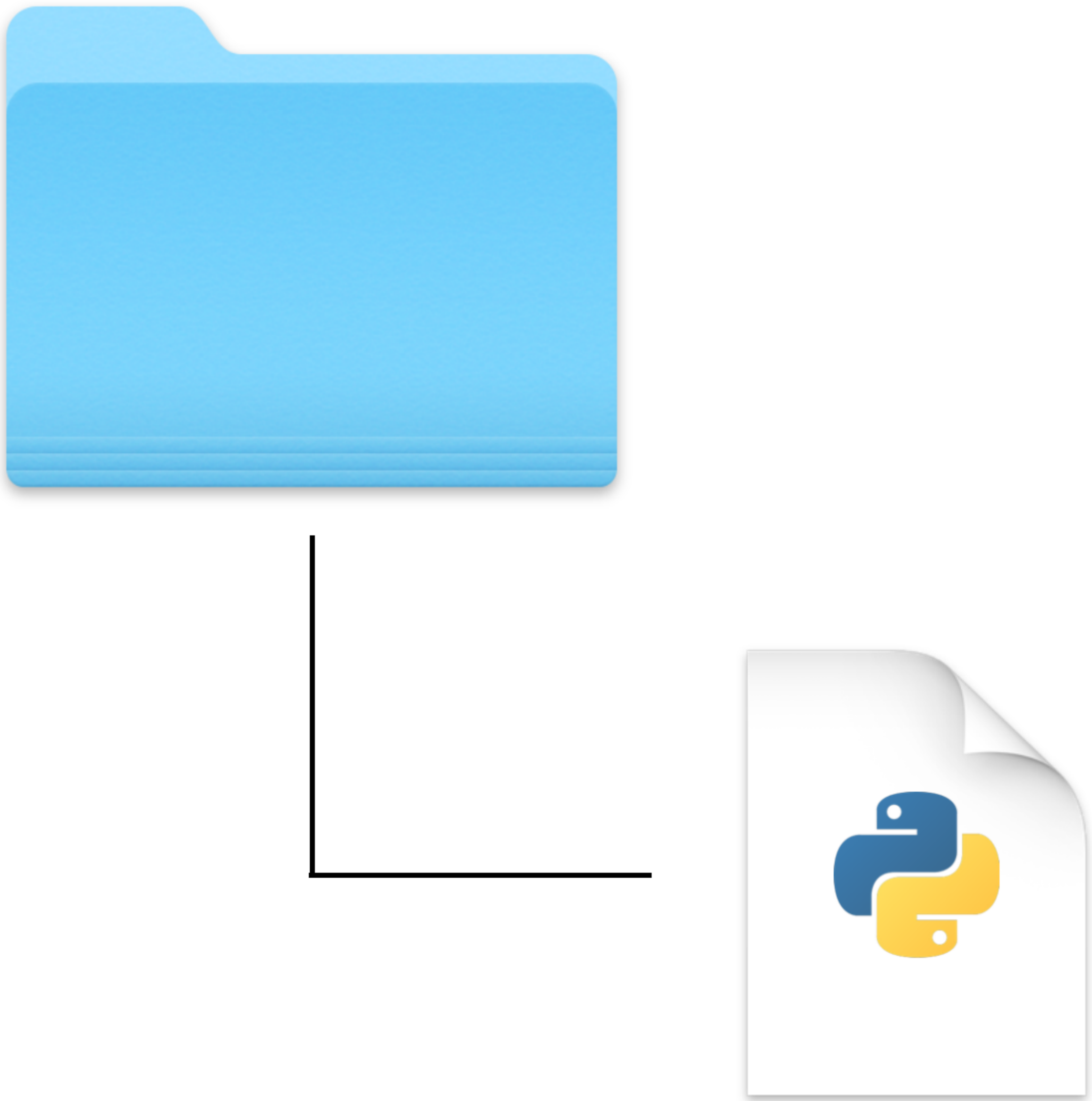
Writing Your First Package

SOFTWARE ENGINEERING PRINCIPLES IN PYTHON

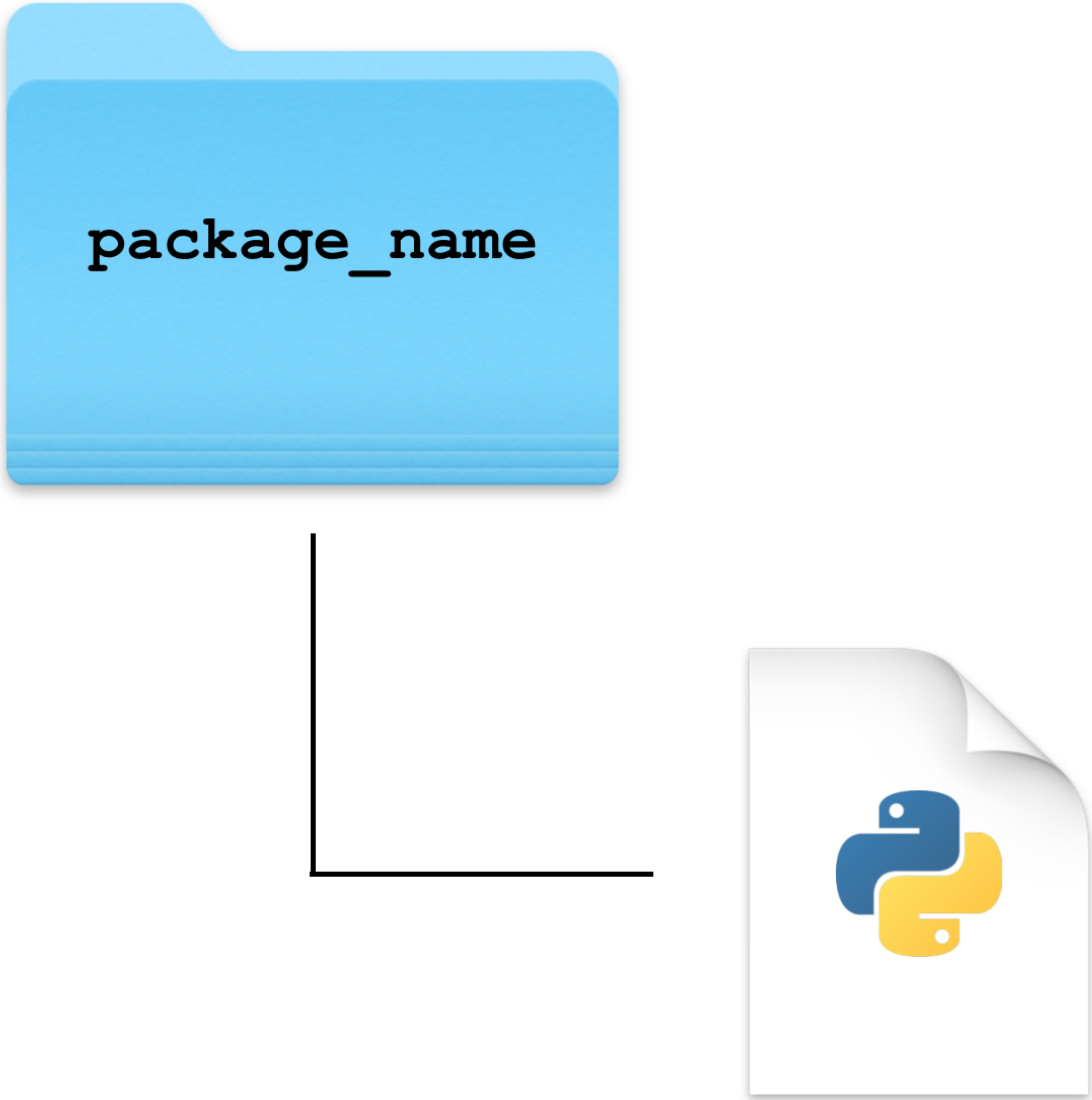
Adam Spannbauer
Machine Learning Engineer at Eastman

datacamp

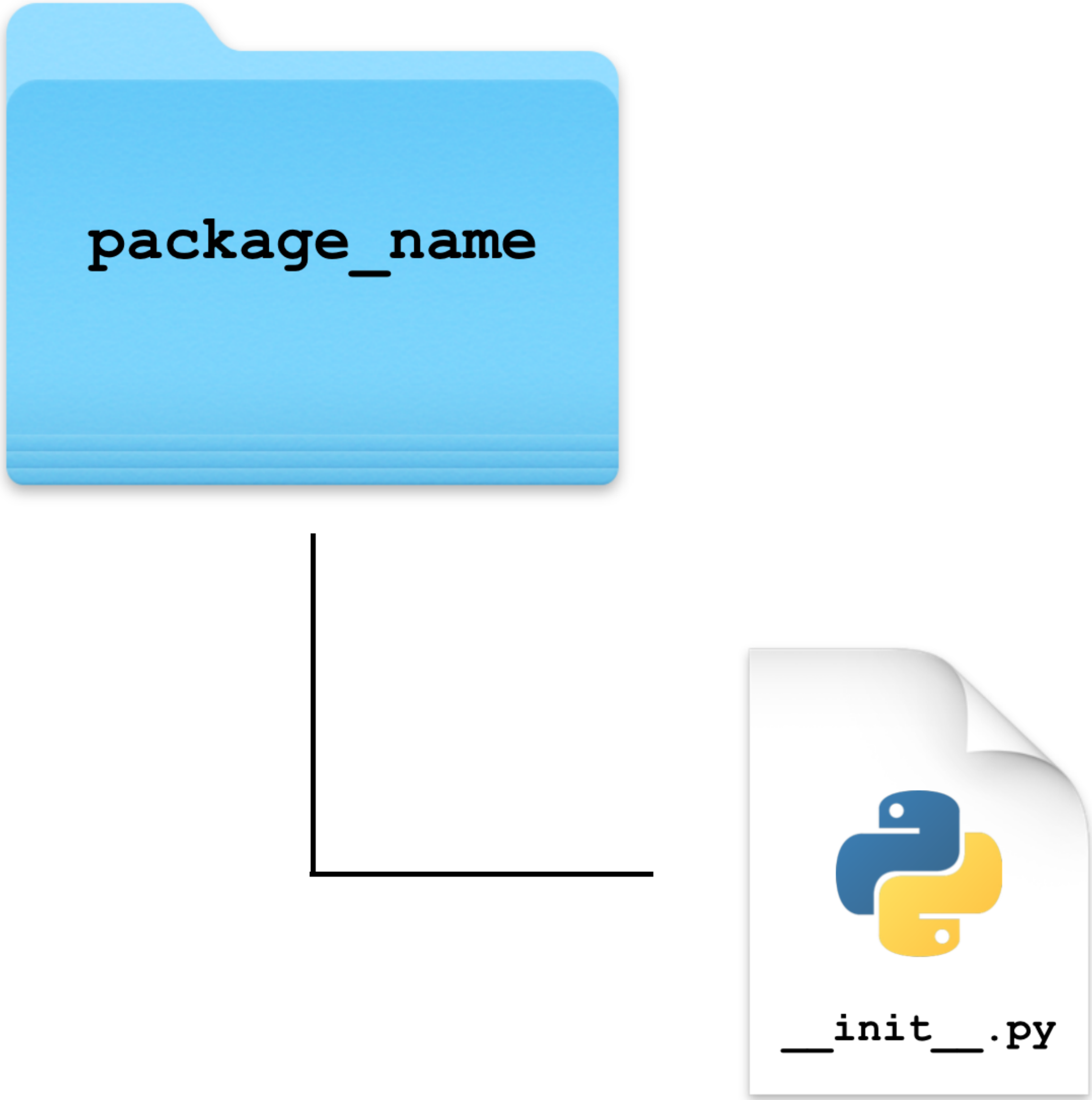
Package structure



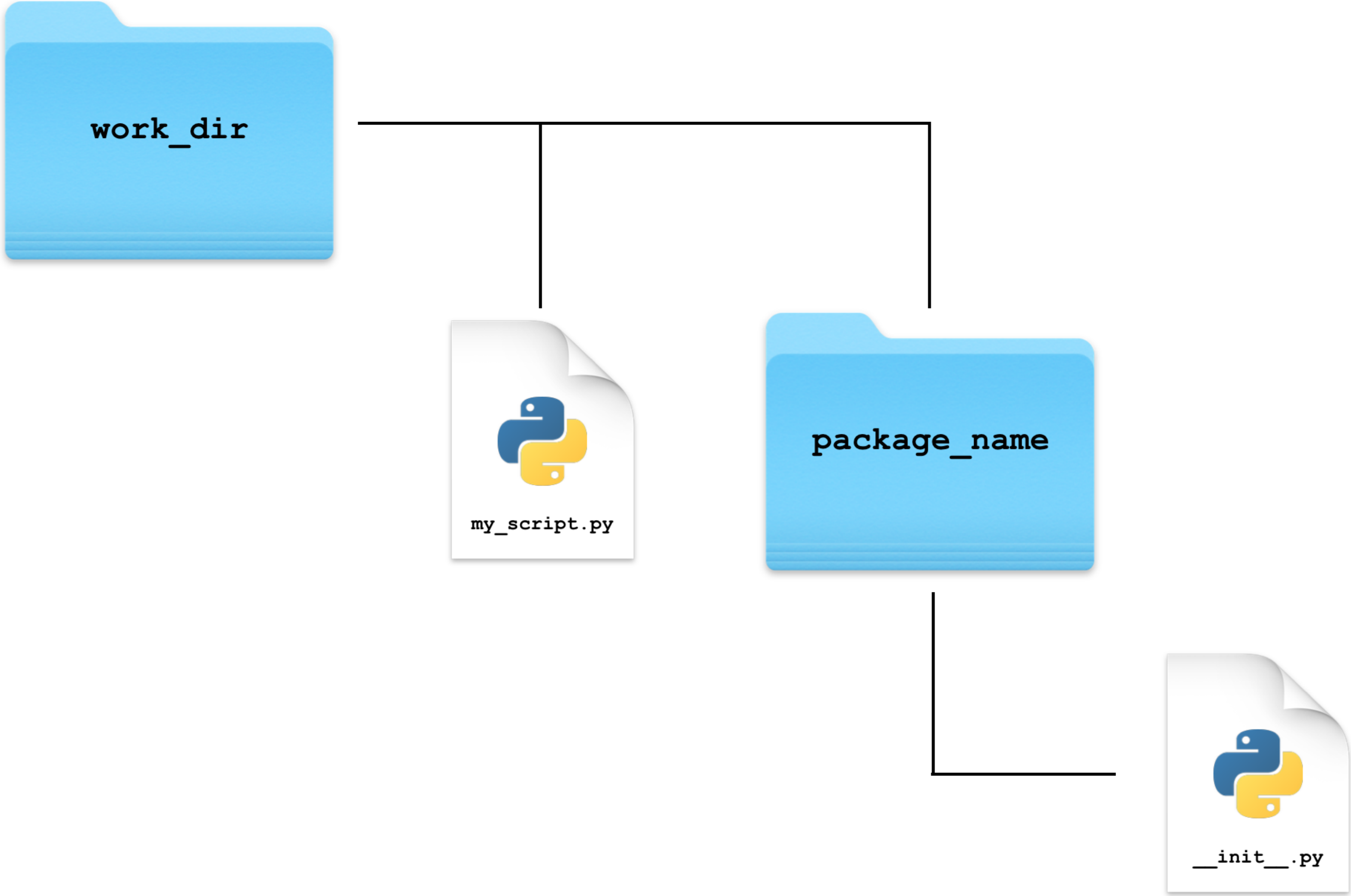
Package structure



Package structure



Importing a local package



Importing a local package

```python
import my_package
help(my_package)
```

```
Help on package my_package:
NAME
    my_package

PACKAGE CONTENTS
FILE
    ~/work_dir/my_package/__init__.py
```

Let's Practice

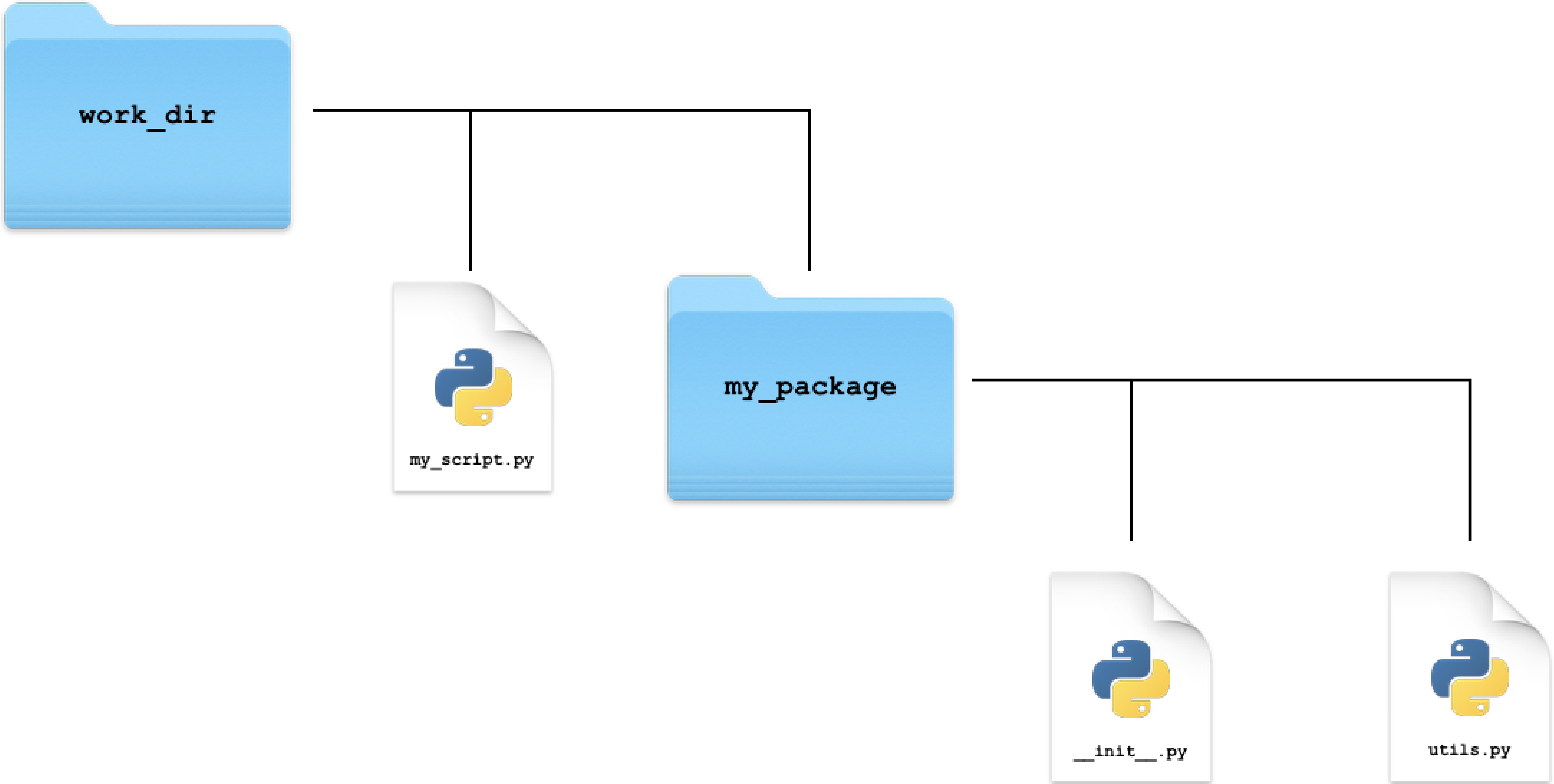
SOFTWARE ENGINEERING PRINCIPLES IN PYTHON

Adding Functionality to Packages

SOFTWARE ENGINEERING PRINCIPLES IN PYTHON

Adam Spannbauer
Machine Learning Engineer at Eastman

Package structure



Adding functionality

working in `work_dir/my_package/utils.py`

```python
def we_need_to_talk(break_up=False):
    """Helper for communicating with significant other"""
    if break_up:
        print("It's not you, it's me...")
    else:
        print('I <3 U!')
```

working in `work_dir/my_script.py`

```python
# Import utils submodule
import my_package.utils

# Decide to start seeing other people
my_package.utils.we_need_to_talk(break_up=True)
```

```
It's not you, it's me...
```

Importing functionality with __init__.py

working in `work_dir/my_package/__init__.py`

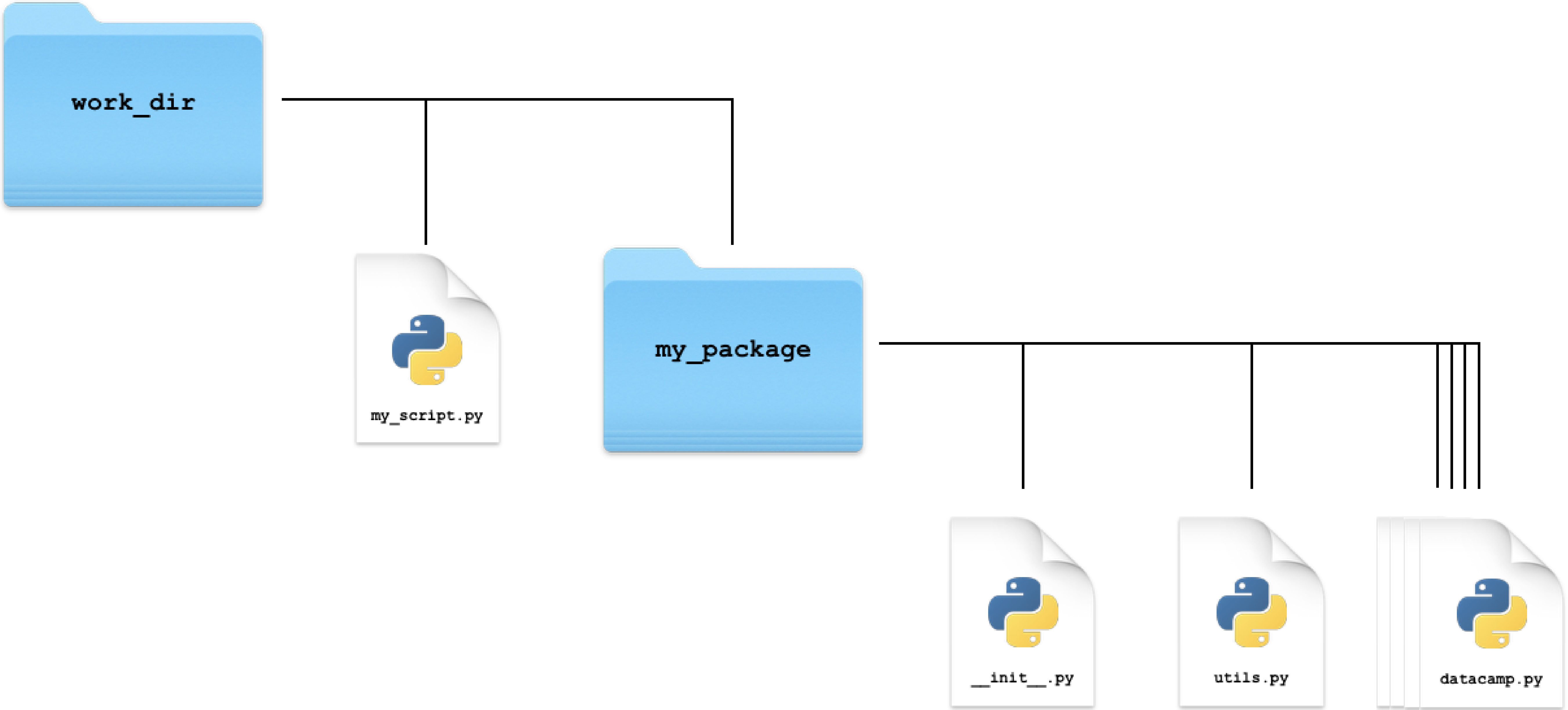
```python
from .utils import we_need_to_talk
```

working in `work_dir/my_script.py`

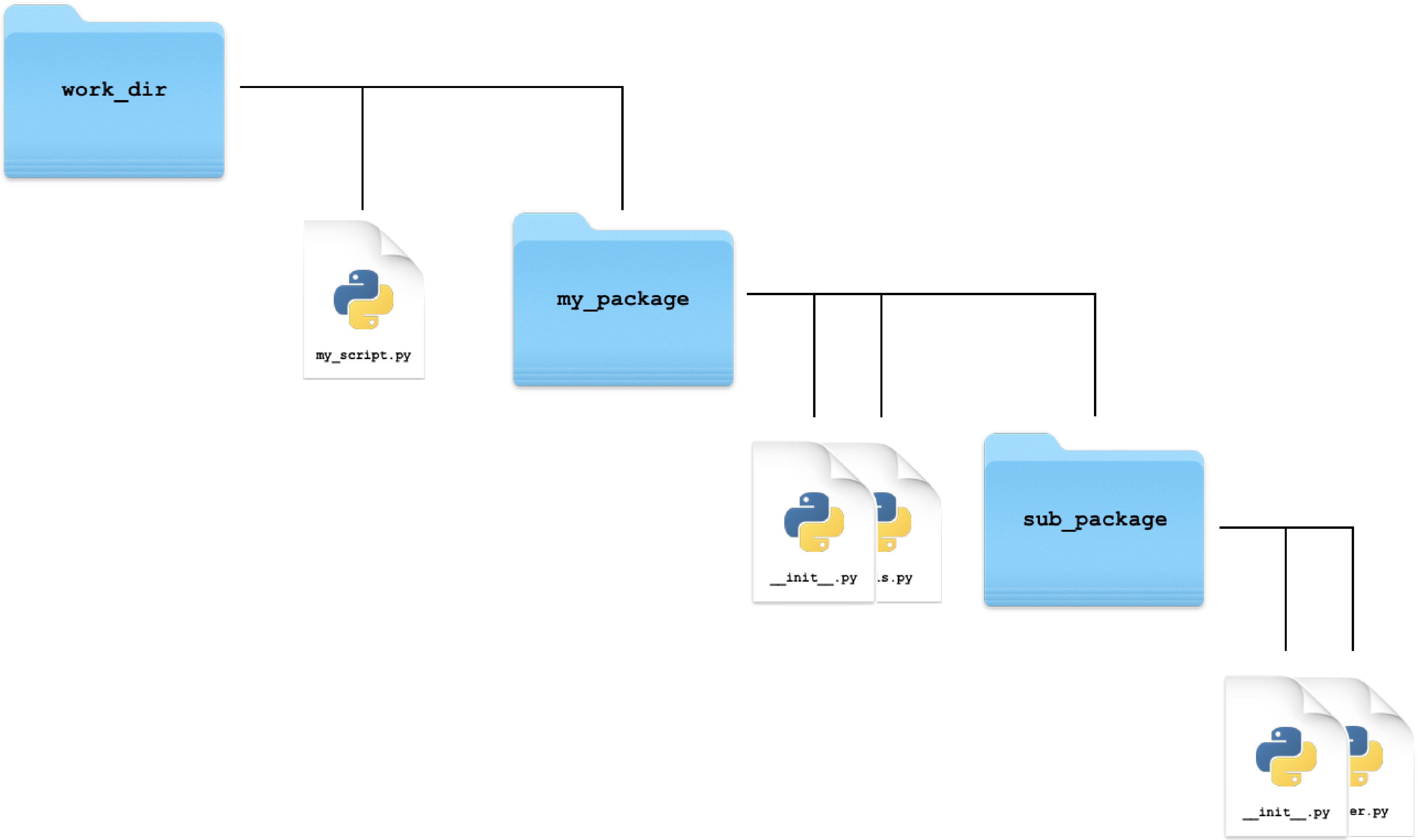
```python
# Import custom package
import my_package

# Realize you're with your soulmate
my_package.we_need_to_talk(break_up=False)
```

```
I <3 U!
```

Extending package structure



Extending package structure



Let's Practice

SOFTWARE ENGINEERING PRINCIPLES IN PYTHON

Making your package portable

SOFTWARE ENGINEERING PRINCIPLES IN PYTHON

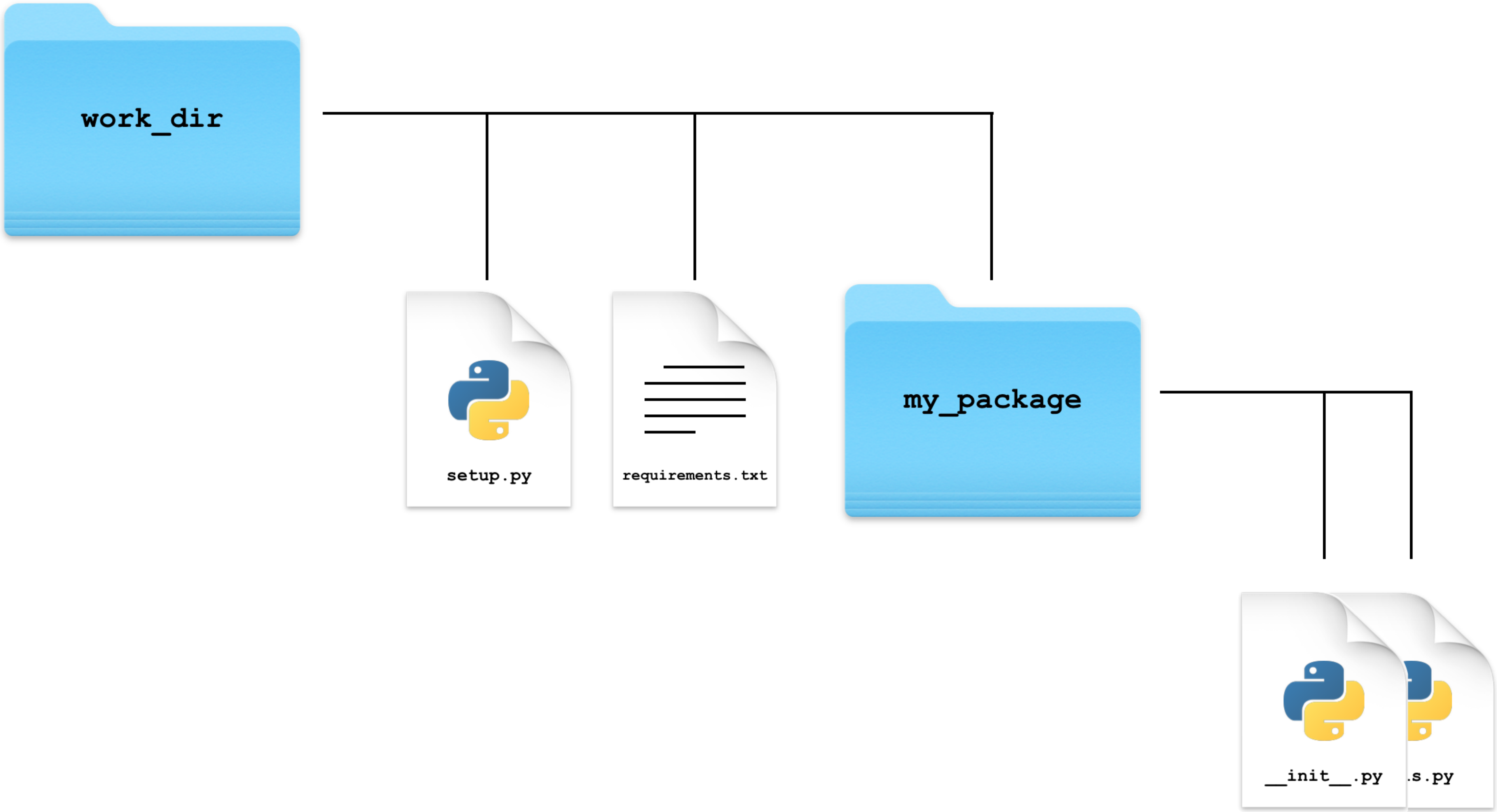
Adam Spannbauer
Machine Learning Engineer at Eastman

Steps to portability

setup.py

requirements.txt

Portable package structure



Contents of requirements.txt

working in `work_dir/requirements.txt`

```
# Needed packages/versions
matplotlib
numpy==1.15.4
pycodestyle>=2.4.0
```

working with `terminal`

```
datacamp@server:~$ pip install -r requirements.txt
```

Contents of setup.py

```python
from setuptools import setup


setup(name='my_package',
      version='0.0.1',
      description='An example package for DataCamp.',
      author='Adam Spannbauer',
      author_email='spannbaueradam@gmail.com',
      packages=['my_package'],
      install_requires=['matplotlib',
                        'numpy==1.15.4',
                        'pycodestyle>=2.4.0'])
```

install_requires vs requirements.txt

working in `work_dir/requirements.txt`

```
# Specify where to install requirements from
--index-url https://pypi.python.org/simple/

# Needed packages/versions
matplotlib
numpy==1.15.4
pycodestyle>=2.4.0
```

Documentation: **install_requires vs requirements files**

pip installing your package

```
datacamp@server:~/work_dir $ pip install .
```

```
Building wheels for collected packages: my-package
  Running setup.py bdist_wheel for my-package ... done
Successfully built my-package
Installing collected packages: my-package
Successfully installed my-package-0.0.1
```

Let's Practice

SOFTWARE ENGINEERING PRINCIPLES IN PYTHON