



ANN Development Kits Preparation

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Development Environment Preparation

1. Install Python (see slide 3)
2. Install Python packages in slide 4. Watch the tutorial at <https://asciinema.org/a/522432> . In summary:
 - a. Install virtualenv and virtualenvwrapper. Then, create a virtual environment.
 - b. Execute `pip install -r requirements.txt`
 - c. Install PyTorch: <https://pytorch.org/get-started/locally/>
3. Install VS Code + extensions (see slide 5)



Python is a programming language that lets you work quickly and integrate systems more effectively.

Python version ≥ 3.8



Ubuntu (version ≥ 20.04)/other Linux users:

Good to go with the pre-installed Python version ≥ 3.8 .



Windows 10/11 users:

Need to install. The recommendation is by using [WSL2 with Ubuntu image on Windows 10](#) with 21H2 update (support GPU). Alternatively, use Python installed using [executable installer](#). Watch these videos for the detailed comparison and the how to:

<https://youtu.be/HPIfCDHZC0s> (comparison), https://youtu.be/S8S7E_d6TYs (install using WSL2), <https://youtu.be/zfARFhiQc9o> (install using executable installer)



MacOS users:

AFAIK, pre-installed with Python version ≥ 3.8 (sorry I'm not a MacOS user :))

Python Packages

Useful libraries for AI/ML development

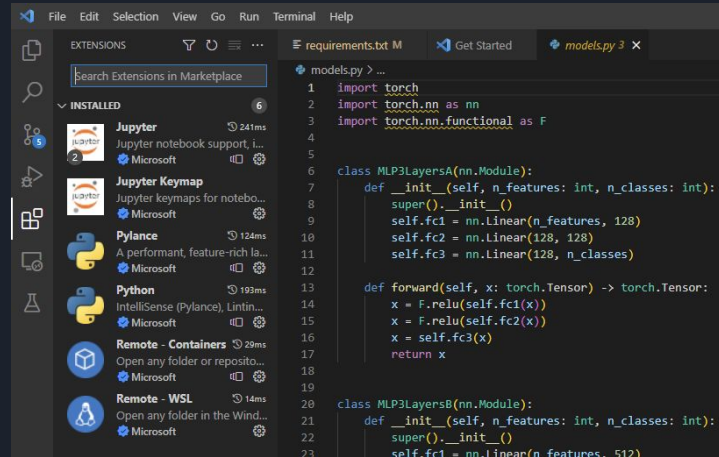
- ★ [Numpy](#): the fundamental package for scientific computing
- ★ [Pandas](#): data analysis and manipulation tools
- ★ [Scikit-learn](#): simple and efficient tools for predictive data analysis
- ★ [PyTorch](#): machine learning framework
- ★ [OpenCV](#): a library of programming functions mainly aimed at real-time computer vision
- ★ [Matplotlib](#): for creating static, animated, and interactive visualizations
- ★ [Virtualenv](#) and [virtualenvwrapper](#): for creating isolated virtual python environments
- ★ [Jupyter Notebook](#): interactive computing platform
- ★ [Ray](#): a unified framework for scaling AI and Python applications

WHY REINVENT THE
WHEEL WHEN YOU
DON'T HAVE TO?



Image source: <https://medium.com/@mcsnotes/about-reinventing-the-wheel12629292> (modified)

Visual Studio Code



Use VS Code as an IDE (Integrated Development Environment).

Watch the tutorial of how to install VS Code in Windows 10:

<https://youtu.be/zlBxwYyzRGI>

Recommended extensions:

- ★ Python: IntelliSense (Pylance), Linting, Debugging (multi-threaded, remote), Jupyter Notebooks, code formatting, refactoring, unit tests, and more
- ★ Jupyter: Jupyter notebook support, interactive programming and computing that supports Intellisense, debugging and more.
- ★ (for Windows users) Remote - WSL: Open any folder in the Windows Subsystem for Linux (WSL) and take advantage of Visual Studio Code's full feature set.



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Vision AI with Yahya



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