

PEA-m6A User Manual (version 1.0)

- PEA-m6A is an ensemble learning framework for predicting m6A modifications at regional-scale.
- PEA-m6A consists of four modules: **Sample Preparation, Feature Encoding, Model Development and Model Assessment**, each of which contains a comprehensive collection of functions with pre-specified parameters available.
- PEA-m6A was powered with an advanced packaging technology, which enables compatibility and portability.
- PEA-m6A project is hosted on <http://github.com/cma2015/PEA-m6A>
- PEA-m6A docker image is available at <http://hub.docker.com/r/malab/peam6a>
- PEA-m6A server can be accessed via <http://peam6a.omstudio.cloud>

PEA-m6A installation

- **Step 1:** Docker installation

i) Docker installation and start ([Official installation tutorial](#))

For **Windows (Only available for Windows 10 Professional and Enterprise version):**

- Download [Docker](#) for windows;
- Double click the EXE file to open it;
- Follow the wizard instruction and complete installation;
- Search docker, select **Docker for Windows** in the search results and click it.

For **Mac OS X (Test on macOS Sierra version 10.12.6 and macOS High Sierra version 10.13.3):**

- Download [Docker](#) for Mac OS;
- Double click the DMG file to open it;
- Drag the docker into Applications and complete installation;
- Start docker from Launchpad by click it.

For **Ubuntu (Test on Ubuntu 18.04 LTS):**

- Go to [Docker](#), choose your Ubuntu version, browse to **pool/stable** and choose **amd64, armhf, ppc64el or s390x**. Download the **DEB** file for the Docker version you want to install;
- Install Docker, supposing that the DEB file is download into following path: **"/home/docker-ce~ubuntu_amd64.deb"**

```
$ sudo dpkg -i /home/docker-ce<version-XXX>~ubuntu_amd64.deb
$ sudo apt-get install -f
```

ii) Verify if Docker is installed correctly

Once Docker installation is completed, we can run `hello-world` image to verify if Docker is installed correctly. Open terminal in Mac OS X and Linux operating system and open CMD for Windows operating system, then type the following command:

```
$ docker run hello-world
```

Note: root permission is required for Linux operating system.

- **Step 2:** PEA-m6A installation from Docker Hub

```
# pull latest peam6a Docker image from docker hub
$ docker pull malab/peam6a
```

- **Step 3:** Launch PEA-m6A local server

```
$ docker run -it -p 8090:8090 malab/peam6a bash
$ bash /home/galaxy/run.sh
```

Then, PEA-m6A local server can be accessed via <http://localhost:8090>

The screenshot shows the Galaxy web interface with the PEA-m6A tool page. The main content area displays a welcome message: "Welcome to PEA-m6A" followed by "An ensemble learning-based framework for predicting m6A modifications in plants". Below this text are three blue buttons: "Docker", "Tutorial", and "Source Codes". The interface includes a left sidebar with a "Tools" section containing a search bar and a list of categories like "SAMPLE PREPARATION", "FEATURES ENCODING", "MODEL DEVELOPMENT", "MODEL ASSESSMENT", "USEFUL TOOLS", and "Workflows". The right sidebar shows a "History" section with a search bar and a message: "Unnamed history (empty) This history is empty. You can load your own data or get data from an external source". The top navigation bar includes links for "Analyze Data", "Workflow", "Shared Data", "Visualization", "Help", "Login or Register", and "About/Contact".