

# Bigfish Docker Engine

# Prerequisites

- Install Docker desktop on your machine.

You can download it here [Docker Desktop](#)

**Follow the instructions on the website to install it!**

- You must have a docker hub account. (login id and password)
  - [Docker Hub sign up](#) You can sign up for free here if you don't have one
- Access to terminal (command line/command prompt)

# Getting the docker image

1. Open a terminal (or command prompt)
2. Login to your docker account through command line  
`docker login`  
Enter your username and password
3. Once successfully logged in we can pull the repository  
`docker pull rachelkt1208/burst_deconv`
4. Once its done you can check it in the list of images you have in your computer currently by using the following command  
`docker images`  
You should see something like this. Note that each image has an IMAGE ID next to it.

```
(base) rachel@ber-linux01:~/Documents/docker_notebook$ sudo docker images
```

REPOSITORY	TAG	IMAGE ID	CREATED	SIZE
burst_deconv	latest	76d8854f29ef	18 minutes ago	925MB
rachelkt1208/burst_deconv	latest	76d8854f29ef	18 minutes ago	925MB

5. You have successfully created a docker image for burst\_deconv

# Run a docker container using the image

1. To run a container copy the IMAGE ID next to the bigfish docker image and paste it in the command below by replacing <<IMAGE ID>> (You may refer to the screenshot below)

```
docker run -it -v notebooks:/home/jupyter -p 8888:8888 <<IMAGE ID>>
```

You should see something like this. If a window doesn't open on your browser directly, copy the url highlighted below in red and paste it on your browser.

```
(base) rachel@ber-linux01:~/Documents/docker_notebook$ sudo docker images
[sudo] password for rachel:
REPOSITORY          TAG          IMAGE ID          CREATED           SIZE
burst_deconv        latest       76d8854f29ef     2 days ago       925MB
rachelkt1208/burst_deconv latest       76d8854f29ef     2 days ago       925MB
```

```
(base) rachel@ber-linux01:~/Documents/docker_notebook$ sudo docker run -it -v notebooks:/home/jupyter -p 8888:8888 76d8854f29ef
[W 15:03:25.280 NotebookApp] WARNING: The notebook server is listening on all IP addresses and not using encryption. This is not recommended
[I 15:03:25.282 NotebookApp] Serving notebooks from local directory: /home/jupyter
[I 15:03:25.282 NotebookApp] Jupyter Notebook 6.4.10 is running at:
[I 15:03:25.282 NotebookApp] http://2334dd83d325:8888/?token=fde3464cfada6f0c23884f68d699babad4644f97cd66b4eb
[I 15:03:25.282 NotebookApp] or http://127.0.0.1:8888/?token=fde3464cfada6f0c23884f68d699babad4644f97cd66b4eb
[I 15:03:25.282 NotebookApp] Use Control-C to stop this server and shut down all kernels (twice to skip confirmation).
[W 15:03:25.286 NotebookApp] No web browser found: could not locate runnable browser.
[C 15:03:25.286 NotebookApp]
```

To access the notebook, open this file in a browser:

file:///home/jupyter/.local/share/jupyter/runtime/nbserver-1-open.html

Or copy and paste one of these URLs:

http://2334dd83d325:8888/?token=fde3464cfada6f0c23884f68d699babad4644f97cd66b4eb

or http://127.0.0.1:8888/?token=fde3464cfada6f0c23884f68d699babad4644f97cd66b4eb

# Run a docker container using the image

2. You should see the following on your browser window



Quit

Logout

Files

Running

Clusters

Select items to perform actions on them.

Upload

New ▾



☐ 0 ▾



/

Name ▾

Last Modified

File size

☐



code\_BurstDECONV

3 days ago

☐



sample\_data

3 days ago

Files

Running

Clusters

Select items to perform actions on them.

Upload

New ▾



☐ 0 ▾



code\_BurstDECONV / DeconvolutionPython+Notebook

Name ▾

Last Modified

File size



..

seconds ago

☐



fitUtilitiesMixed

3 days ago

☐



utilities

3 days ago

☐



BurstDeconv.ipynb

3 days ago

31.9 kB

☐



fitMixedResolutionMovies.ipynb

3 days ago

3.35 kB

☐



BurstDeconv.py

3 days ago

3.46 kB

☐



readMefitMixedResolutionMovies.txt

3 days ago

494 B

☐



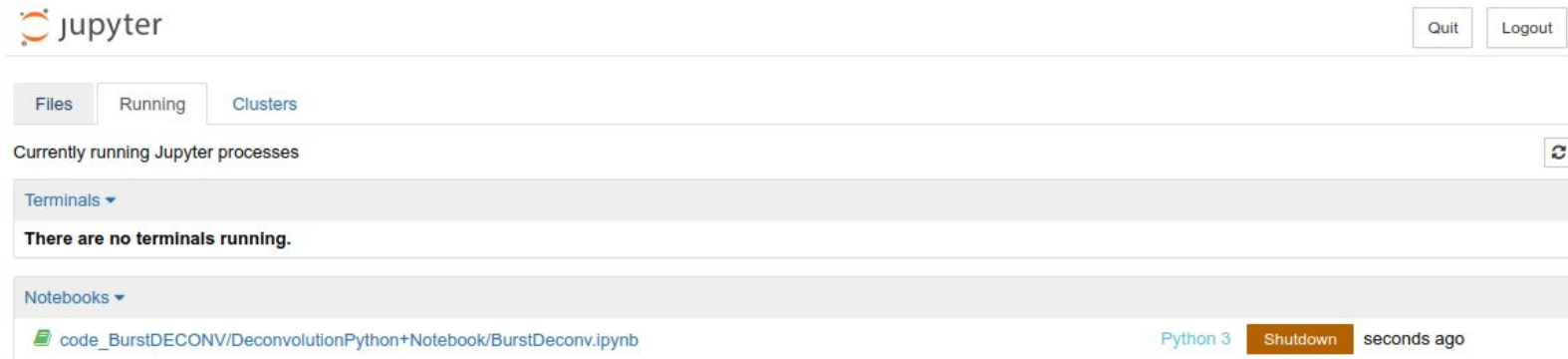
requirements.txt

3 days ago

379 B

# Closing the notebooks

1. The notebooks are autosaved. However you must stop them from running and exit the jupyter-notebook properly so that the saved changes are preserved.
2. Click on the tab “Running”



The screenshot shows the Jupyter web interface. At the top left is the Jupyter logo. At the top right are 'Quit' and 'Logout' buttons. Below the logo are three tabs: 'Files', 'Running' (which is selected), and 'Clusters'. The main content area is titled 'Currently running Jupyter processes' and contains two sections: 'Terminals' and 'Notebooks'. The 'Terminals' section states 'There are no terminals running.' The 'Notebooks' section lists a notebook named 'code\_BurstDECONV/DeconvolutionPython+Notebook/BurstDeconv.ipynb' with a 'Python 3' language indicator, a 'Shutdown' button, and the text 'seconds ago'.

3. Click on Shutdown to close the notebooks.
4. Once all are closed click on Quit on the top right to close the jupyter notebook.



This screenshot shows the Jupyter web interface after the notebook has been shutdown. The layout is identical to the previous one, but the 'Notebooks' section is now empty, indicating that no notebooks are currently running.

# Opening the notebook again

Open docker program on your system.

## Containers [Give Feedback](#)

A container packages up code and its dependencies so the application runs quickly and reliably from one computing environment to another. [Learn more](#)

Showing 1 Items



<input type="checkbox"/>		NAME	IMAGE	STATUS	PORT(S)	STARTED	
--------------------------	--	------	-------	--------	---------	---------	--

<input type="checkbox"/>		<b>festive_borg</b> 3084cb71ec04 	<a href="#">bigfish-docker</a>	Exited	8888		
--------------------------	---	---	--------------------------------	--------	------	---	---



```
[W 14:59:34.789 NotebookApp] Notebook scripts/4 - Segment nuclei and cells.ipynb is not trusted
[I 14:59:35.350 NotebookApp] Kernel started: 6c49a214-cac7-458d-85e4-01aaae5b1597, name: python3
[IPKernelApp] ERROR | No such comm target registered: jupyter.widget.control
[IPKernelApp] WARNING | No such comm: 90cf81b1-49ce-4a29-84f7-c2d020ab62f1
[I 15:01:27.698 NotebookApp] Uploading file to /data/input/GFP_CycT1_mut_C4xx_DAPI.tif
[I 15:01:28.768 NotebookApp] Uploading file to /data/input/GFP_CycT1_mut_C4xx_CY3.tif
[I 15:01:31.049 NotebookApp] Saving file at /data/input/GFP_CycT1_mut_C4xx_DAPI.tif
[I 15:01:32.146 NotebookApp] Saving file at /data/input/GFP_CycT1_mut_C4xx_CY3.tif
[I 15:01:35.648 NotebookApp] Saving file at /scripts/4 - Segment nuclei and cells.ipynb
[W 15:01:35.648 NotebookApp] Notebook scripts/4 - Segment nuclei and cells.ipynb is not trusted
[W 09:16:47.975 NotebookApp] 403 POST /api/contents/data/input (172.17.0.1): '_xsrf' argument missing from POST
[W 09:16:47.976 NotebookApp] '_xsrf' argument missing from POST
[W 09:16:47.977 NotebookApp] 403 POST /api/contents/data/input (172.17.0.1) 3.650000ms referer=http://127.0.0.1:8888/tree/data/input
[W 09:16:53.055 NotebookApp] 403 POST /api/contents/data/input (172.17.0.1): '_xsrf' argument missing from POST
[W 09:16:53.055 NotebookApp] '_xsrf' argument missing from POST
[W 09:16:53.056 NotebookApp] 403 POST /api/contents/data/input (172.17.0.1) 1.710000ms referer=http://127.0.0.1:8888/tree/data/input
[I 09:16:59.197 NotebookApp] Starting buffering for 6c49a214-cac7-458d-85e4-01aaae5b1597:ad21alf5883e40a896d452c2e23d84f9
[I 09:16:59.651 NotebookApp] Starting buffering for cba8b95a-3579-401c-b9f5-c1481fe518db:598a9f359a5d43afbf582bb7f548f2d0
[C 09:17:15.005 NotebookApp] received signal 15, stopping
[I 09:17:15.006 NotebookApp] Shutting down 2 kernels
[I 09:17:15.008 NotebookApp] Kernel shutdown: cba8b95a-3579-401c-b9f5-c1481fe518db
[I 09:17:15.008 NotebookApp] Kernel shutdown: 6c49a214-cac7-458d-85e4-01aaae5b1597
[I 09:17:16.127 NotebookApp] Shutting down 0 terminals
[W 09:18:06.903 NotebookApp] WARNING: The notebook server is listening on all IP addresses and not using encryption. This is not recommended.
[I 09:18:06.905 NotebookApp] Serving notebooks from local directory: /home/jupyter
[I 09:18:06.905 NotebookApp] Jupyter Notebook 6.4.10 is running at:
[I 09:18:06.905 NotebookApp] http://3084cb71ec04:8888/?token=074f943afacb41480c05983d16b5914791d04b888c317232
[I 09:18:06.905 NotebookApp] or http://127.0.0.1:8888/?token=074f943afacb41480c05983d16b5914791d04b888c317232
[I 09:18:06.905 NotebookApp] Use Control-C to stop this server and shut down all kernels (twice to skip confirmation).
[W 09:18:06.907 NotebookApp] No web browser found: could not locate runnable browser.
[C 09:18:06.908 NotebookApp]
```

To access the notebook, open this file in a browser:  
file:///home/jupyter/.local/share/jupyter/runtime/nbserver-1-open.html  
Or copy and paste one of these URLs:  
http://3084cb71ec04:8888/?token=074f943afacb41480c05983d16b5914791d04b888c317232  
or http://127.0.0.1:8888/?token=074f943afacb41480c05983d16b5914791d04b888c317232

```
[I 09:18:12.296 NotebookApp] 302 GET / (172.17.0.1) 0.900000ms
[I 09:18:12.303 NotebookApp] 302 GET /tree? (172.17.0.1) 0.800000ms
```

