

# Workshop Machine Learning: practical application to Astrophysics

## Survey

### Results for "Workshop Experience"

13 people responded to this survey

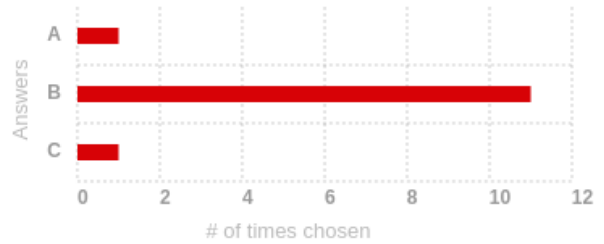
#### Length of the sessions

Answered: 13

A. too long: 1 (7.69%)

B. right: 11 (84.62%)

C. too short: 1 (7.69%)



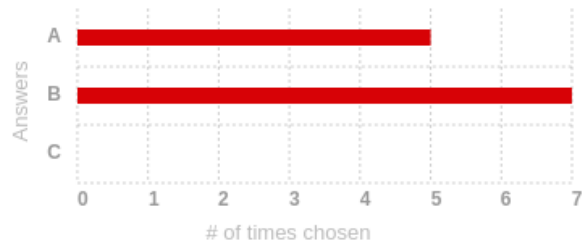
#### Session content

Answered: 13

A. too much: 5 (41.67%)

B. right: 7 (58.33%)

C. less than optimal: 0 (0.00%)



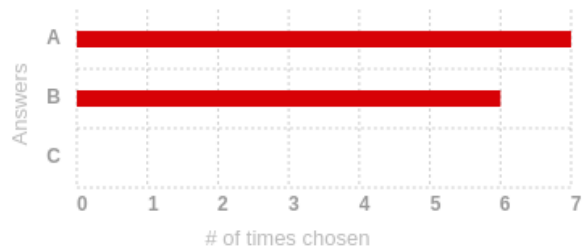
#### Support for problems during the session

Answered: 13

A. sufficient: 7 (53.85%)

B. right: 6 (46.15%)

C. insufficient: 0 (0.00%)



## Workshop Machine Learning: practical application to Astrophysics

### Preparation of the course environment

Answered: 7

please answer this  
---for your workstation

*colab: ok*

*It worked very well.*

*Setting up the environment did not work on my machine (apparently TensorFlow 2.2.0 is not available on Conda for Mac?).*

*worked well in colab*

*No immediate MacOS compatibility. Anaconda on MacOS just supports Tensorflow 2.0.0 instead of the required Tensorflow 2.2.2. Gal mentioned this issue. I followed along what he was doing on his notebook.*

*I would have appreciated some comments in the python code, to help understanding at least the most important commands (not everything could be explained during the workshop)*

*The Jupyter notebook and zoom combination was very good given the circumstances. I think it would only be marginally better with an in-person workshop.*

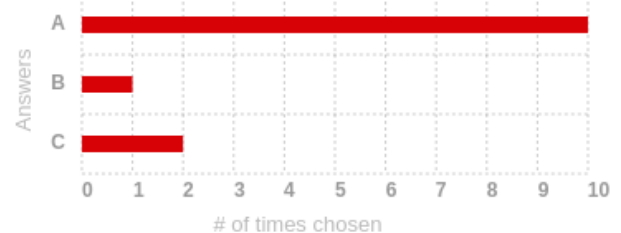
### The interactive part (operating the workbook) was working

Answered: 13

**A. good:** 10 (76.92%)

**B. right:** 1 (7.69%)

**C. insufficient:** 2 (15.38%)



## Workshop Machine Learning: practical application to Astrophysics

### Suggestions for improvements

Answered: 9

*the chat logs would be good to keep*

*Increase the amount of hours/days to avoid speed*

*well prepared*

*Compress such a fascinating subject in two days is clearly constraining but the overall result is great.*

*More comments/explanations in the notebooks would've been helpful.*

*Short introduction about exercises in the beginning would be helpful. I understand that content was large though right enough, but felt it was a bit faster and was not easy to grasp everything atleast for a beginner like me.*

*Although this workshop was more practical application oriented, maybe a little more theoretical concepts would be better to grasp the ideas.*

*Based on the questions, many participants were new to machine learning, so more background information may be useful. The workshop can be easily expanded to a 3-4 day workshop. The jupyter notebooks had a lot of highly developed code. Understanding what the code really does is barely possible during the session. But the notebooks are ideal for starting to play around with existing data. More advice on the limitations of machine learning applications in astronomy would be helpful, e.g. data uncertainties (astronomers wrote dedicated ML packages that deal with data uncertainties and error propagation), biased training sets, data extrapolation, physics vs. data science etc.*

*The last session was too rushed. If the workshop is repeated at some point, please make sure not to compress any of the sessions. The content, complexity and pace was very good otherwise.*

## Workshop Machine Learning: practical application to Astrophysics

### Do you have suggestion for other examples

Answered: 6

E.g data sets form different fields of astronomy

*tensorboard demonstration, dask\_ml or parallel libraries..*

*I'd be interested in e.g. having observations from Radio (?) e.g. Lofar*

*Time series data*

*object classification (spectra), candidate selection in surveys, photometric redshifts*

*Not directly, but I know that a workshop on a similar topic was organised by ESO last year, maybe looking at the programme can provide some ideas: <https://www.eso.org/sci/meetings/2019/AIA2019/program.html>*

*Maybe reducing CCD images, i.e. reducing 2D spectra to 1D spectra with sky subtraction or background removal, sky subtraction, etc. for imagers.*