Demystifying Machine Learning and Best Data Practices

Workshop Series for
Underrepresented STEM Undergraduate and MS Researchers
bound for PhD Training Programs

Dr Pleuni Pennings / Dr Ray Esquerra
San Francisco State University

Goals of the project: ML for bio/chem students with no CS background

1. Hold workshops for bio/chem students on machine learning

2. Create materials that others can use (video and code)

3. Evaluate and improve

4. Implement in graduate classes

Our Machine Learning / Covid data workshop is ready for everyone to use

https://docs.google.com/document/d/1K-vaRSyPvEopGHlPrwZzdN8QqGcPNVpQL2r4NTVniIg/edit?usp=sharing

Machine Learning Workshop: Decision Tree Model

Machine Learning in Python

Hello, we are so glad that you took the first step in your journey on learning how to code & do machine learning!

This machine learning, decision tree model workshop was created by: Lucy Moctezuma, Lorena Benitez-Rivera, Dr. Pennings, and Florentine van Nouhuijs.

We are the machine learning team at San Francisco State University (SFSU), and we are all members of the CoDE lab https://pleunipennings.wordpress.com/

Lucy Moctezuma	Lorena Benitez-Rivera	Dr. Pleuni Pennings	Florentine van Nouhuijs
Math Undergraduate's student	Biology Master's student	Biology professor, pennings@sfsu.edu	Biology Master's student

Videos and code by some of the best students from SFSU

Lorena's video gives an introduction to machine learning and the covid data set we use.
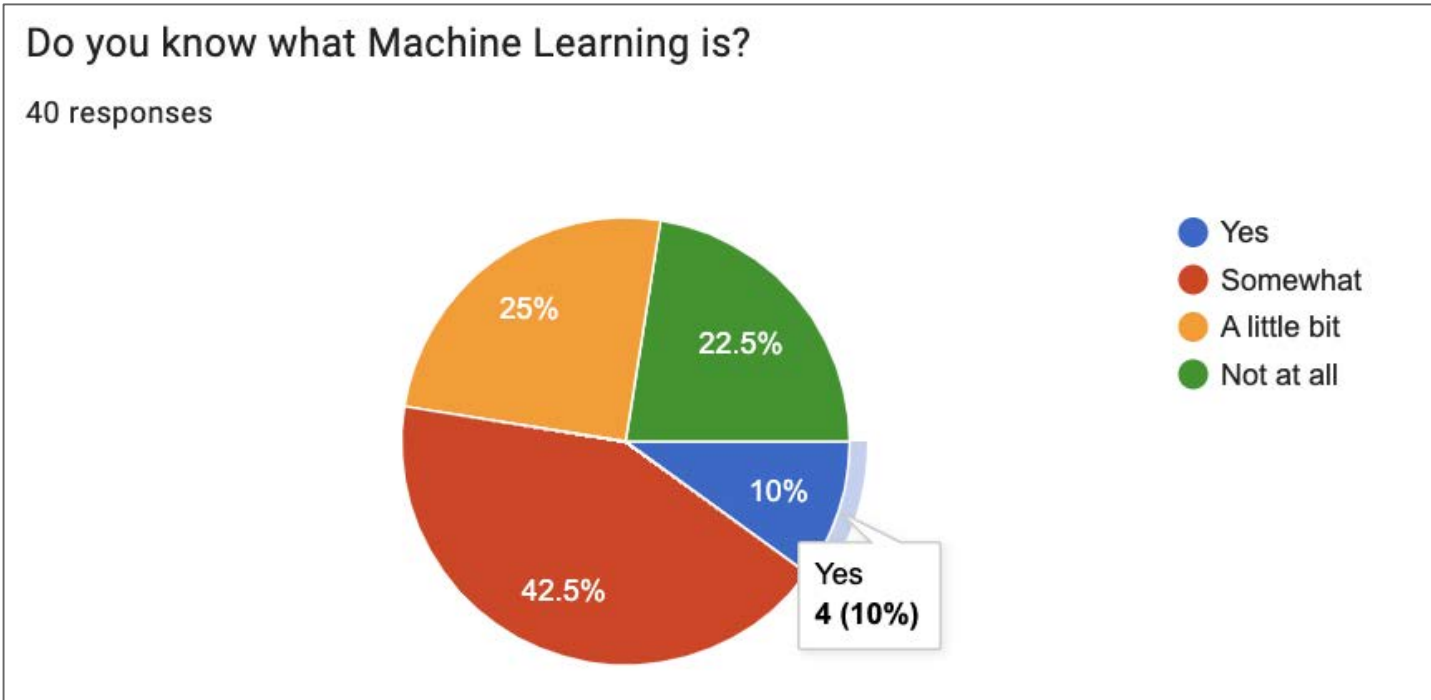

Lorena Benitez-Rivera
SFSU Biology MS student.
Applying for PhD
programs this fall.

Pre-survey:
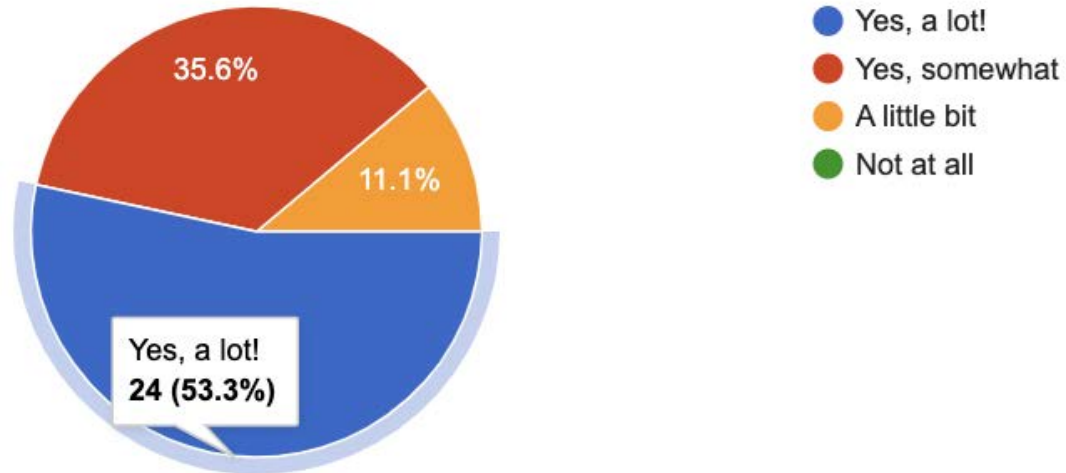# Only 10% of students answer: yes, I know what ML is.

Do you know what Machine Learning is?

40 responses

- Yes
- Somewhat
- A little bit
- Not at all

25%

22.5%

10%

42.5%

Yes
4 (10%)

Post-survey (after one hour workshop)
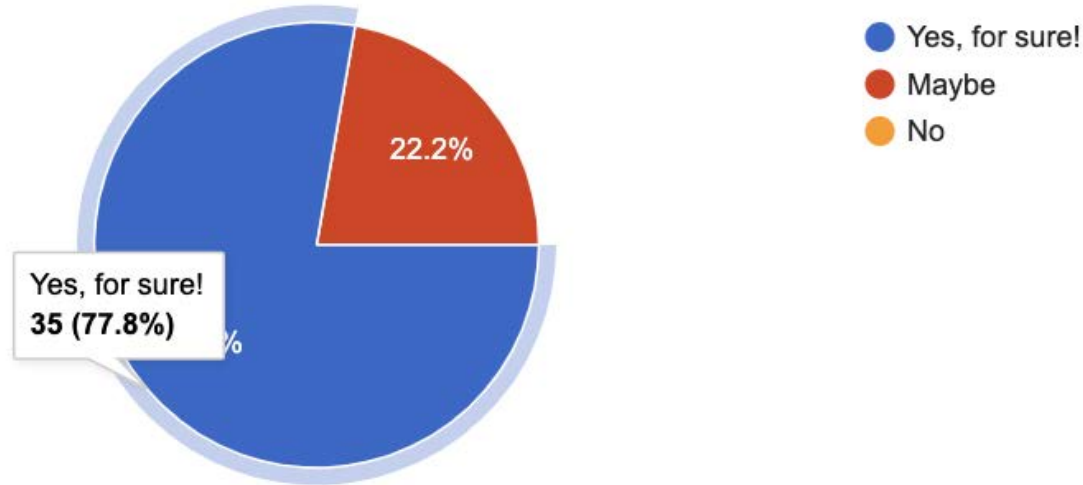# 53% say their understanding of ML improved a lot

Post-survey (after one hour workshop)
78% of students say "yes" to learning more ML

After today, would you like to learn more ML skills?

45 responses

Yes, for sure!
35 (77.8%)

22.2%

- Yes, for sure!
- Maybe
- No

Challenges

Making good code and good videos is hard!

Everything took longer than expected.

We planned 3 workshops, but have only 1.5 done.

Future work

1. Finish workshop 2

2. Work with colleagues to get the materials in their classes

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