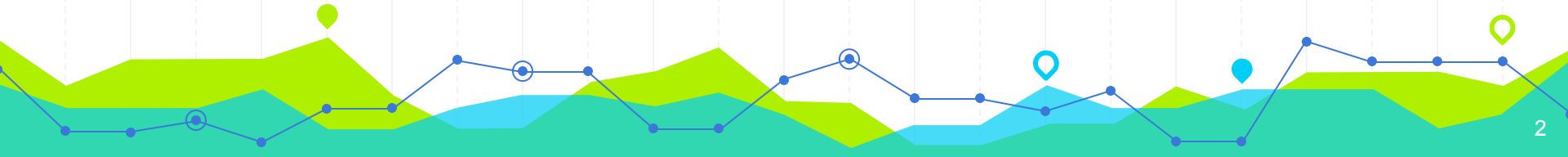# Python Bootcamp

Workshop 6

8/18
Youth In Code
Justin Liu

Roadmap

- Numpy and Pandas
- Applications
- Final Project
- Q & A
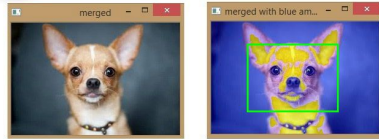- Send-off

Modules for handling lists and dictionaries

- Numpy
    - Serves as the foundation for scientific computing and is used in data science and machine learning
    - Great alternatives to Python lists, are fast, easy to work with, and give users the opportunity to perform calculations across matrices/tensors
- Pandas
    - Key data structure: DataFrame
    - DataFrames allow you to store and manipulate tabular data in rows of observations and columns of variables — great for handling csv files
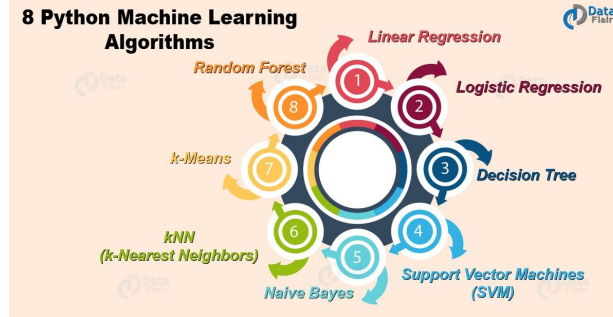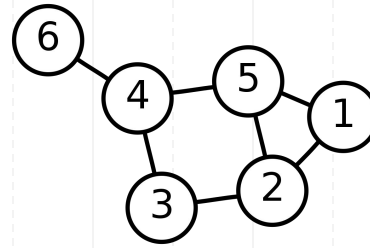
Cumulative/Final Project

Be creative with it, and most importantly, have fun. Below are some of my suggestions (although you can find hundreds more on the internet).

- Basic:
    - Tic-Tac-Toe
    - Space Invaders
    - Pong
    - Tetris
    - Card Games
    - Fortune Teller
    - Madlibs
- More Advanced:
    - Image processing/Photo manipulation
    - Student Information + Course Registration System
    - Web Scraper (bs4)
        - COVID data, stock tracker, Amazon prices, social media
    - Website Automation (selenium)
    - ML Regressor or Classifier

Applications & other Python-related topics

Flask
web development,
one drop at a time

Image Processing

OpenCV

python

merged

merged with blue am...

NLTK Spark theano Numpy

Keras Pytorch

TensorFlow

Scikit-learn Pandas mxnet

8 Python Machine Learning Algorithms

DataFlair

Random Forest
8

Linear Regression
1

Logistic Regression
2

k-Means
7

Decision Tree
3

kNN
(k-Nearest Neighbors)
6

5

4

Support Vector Machines
(SVM)

Naive Bayes

```
def recurse():
    ...
    recurse()
    ...

recurse()
```

recursive call

DATA STRUCTURES AND ALGORITHMS

PYTHON
FOR DATA SCIENCE

Search Engine Search Websites

News Sources

Web Scraping

Company Information

Social Media HTML RSS Data Of Charts

Any questions?
Need help deciding on a project?