

Python102

Python for Data Science Bootcamp

(0) Course Introduction

AIAT Academy

Course Goal

- Review basic syntax in Python programming
- Gather experience with Popular Python Libraries
 - NumPy, SciPy, SciKit-Learn, etc.
 - Matplotlib, Pandas, Seaborn, etc.
- Understand and trial Machine Learning using Python
- Hybrid Learning
 - Active Learning 50%
 - Passive Learning 50%

Course's Outline

Day 1

Morning Session

- Python Environment Set-up
 - Windows and Mac
- Jupyter Notebook Overview
- Google Colaboratory (Colab)
- **Break**
- Python Basics (Part 1)
 - Interactive Interpreter and Comments
 - Variable and Types, Number and Boolean
- Python Basics (Part 2)
 - Strings, Control I/O, and Functions
- Python Basics Exercise 1
- **Lunch**

Afternoon Session

- Python Basics (Part 3)
 - Control Flow (Condition) and Loops
 - List and Dictionary
- Python Basics Exercise 2
- **Break**
- Python for Data Analysis
 - NumPy
 - Pandas
- Data Analysis Exercises

Course's Outline

Day 2

Morning Session

- Introduction
- Python for Data Visualization
 - Matplotlib
 - Seaborn
- Data Visualization Exercise
- **Break**
- Introduction to Machine Learning
- Machine Learning Basics (Part 1)
 - Linear Regression
 - Logistic Regression
- Machine Learning Exercise 1.1
- Machine Learning Exercise 1.2
- **Lunch**

Afternoon Session

- Machine Learning Basics (Part 2)
 - Support Vector Machine
 - K means Clustering
- Machine Learning Exercise 2.1
- Machine Learning Exercise 2.2
- **Break**
- Machine Learning Basics (Part 3)
 - Natural Language Processing
 - Neural Nets and Deep Learning
- Machine Learning Exercise 3.1
- Machine Learning Exercise 3.2

History of Python

- Python 1: 1994
- Python 2: 2000
- Python 3: 2008



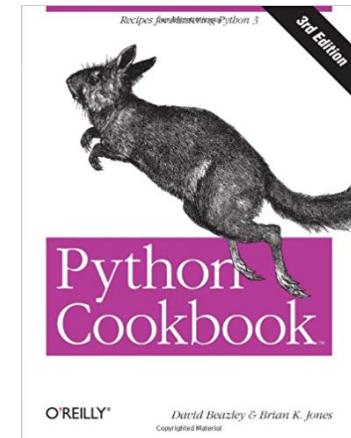
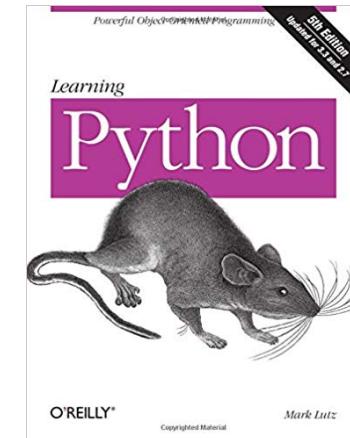
Guido van Rossum

Major versions of Python

- Python 2 (2.7.x)
 - Python 2 will be retired in 2020
- **Python 3 (3.x)**
 - Good for beginner
 - Good for general use
- **We are using 3.7.x in this course**

Interesting Materials

- <https://www.python.org>
 - Documentation, beginner guide, tutorials, etc.
- Quality books for learning Python
 - Learning Python by Mark Lutz
 - Python Cookbook by David Beazley and Brian K. Jones
 - Fluent Python: Clear, Concise, and Effective Programming by Luciano Ramalho



"Hello World" in C Programming Language

```
#include<stdio.h>

void main(){
    printf("Hello World!");
    return 0;
}
```

"Hello World" in Java Programming Language

```
public class HelloWorld {  
    public static void main(String[] args) {  
        System.out.println("Hello World!");  
    }  
}
```

"Hello World" in Python Programming Language

```
print("Hello World!")
```

Python in World-class software companies



facebook



Google



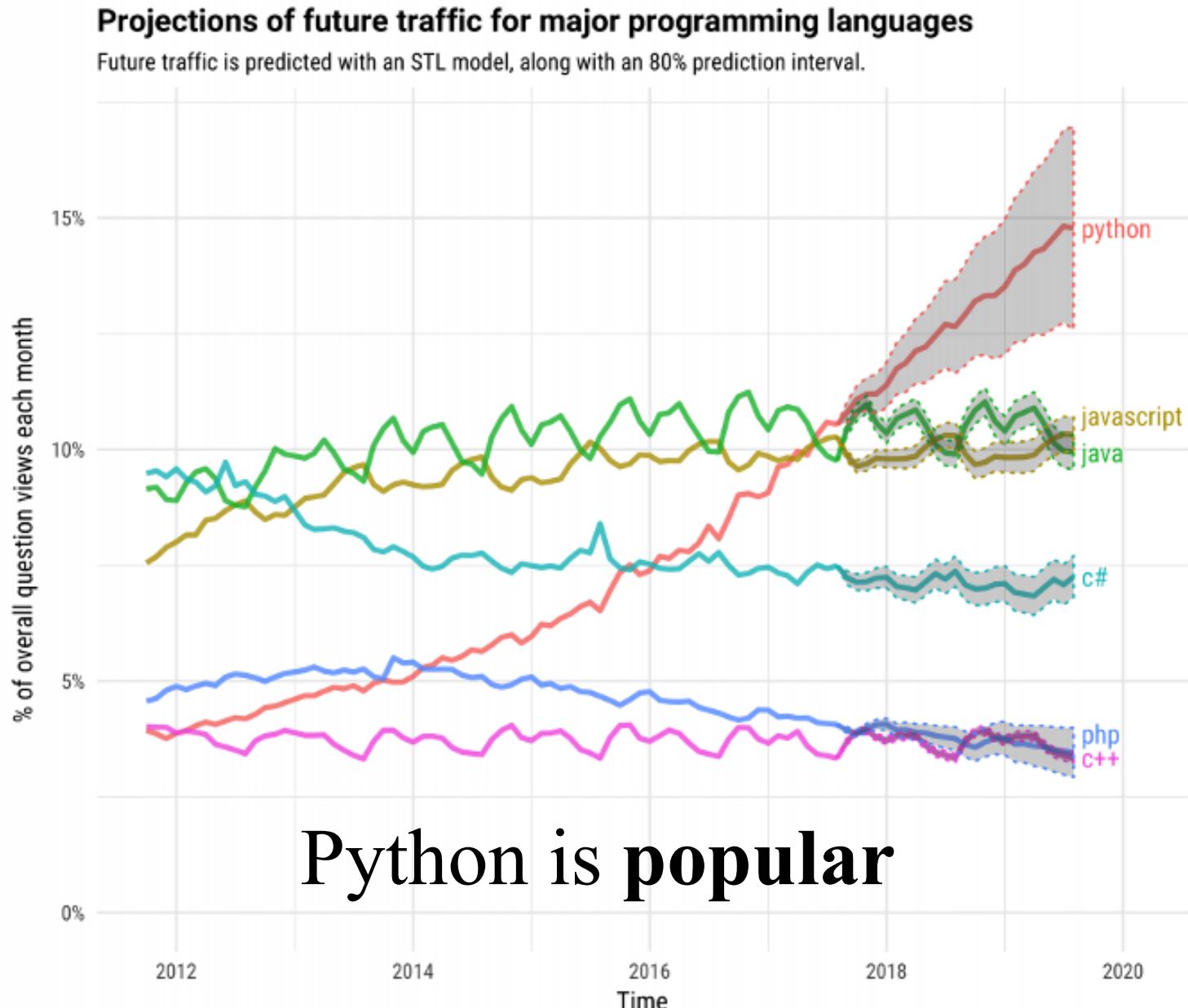
Spotify®

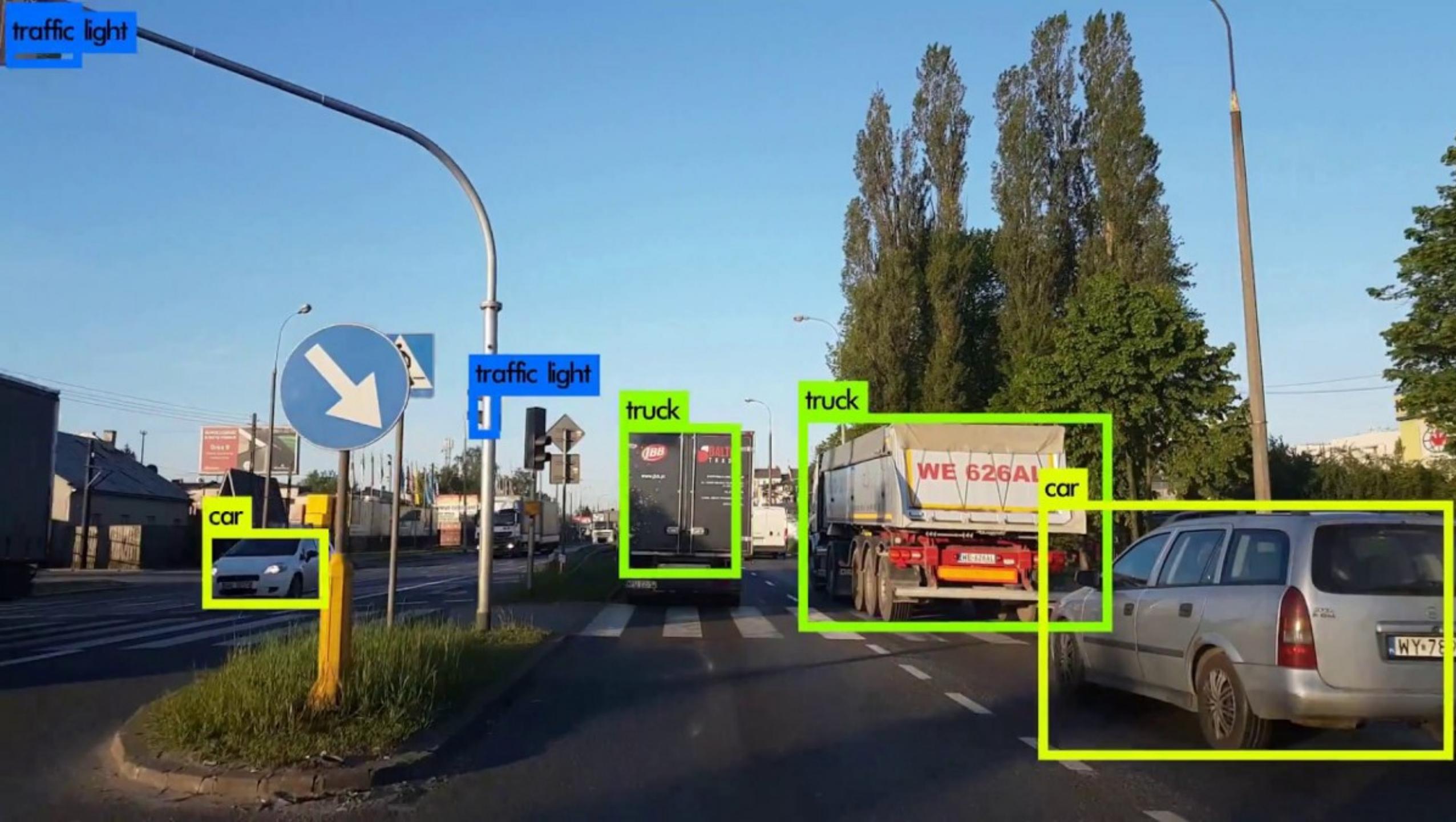
Instagram

Programming Language Ranking

Dec 2018	Dec 2017	Change	Programming Language	Ratings	Change
1	1		Java	15.932%	+2.66%
2	2		C	14.282%	+4.12%
3	4	▲	Python	8.376%	+4.60%
4	3	▼	C++	7.562%	+2.84%
5	7	▲	Visual Basic .NET	7.127%	+4.66%
6	5	▼	C#	3.455%	+0.63%
7	6	▼	JavaScript	3.063%	+0.59%
8	9	▲	PHP	2.442%	+0.85%
9	-	▲	SQL	2.184%	+2.18%
10	12	▲	Objective-C	1.477%	-0.02%
11	16	▲	Delphi/Object Pascal	1.396%	+0.00%
12	13	▲	Assembly language	1.371%	-0.10%
13	10	▼	MATLAB	1.283%	-0.29%
14	11	▼	Swift	1.220%	-0.35%
15	17	▲	Go	1.189%	-0.20%
16	8	▼	R	1.111%	-0.80%
17	15	▼	Ruby	1.109%	-0.32%
18	14	▼	Perl	1.013%	-0.42%
19	20	▲	Visual Basic	0.979%	-0.37%
20	19	▼	PL/SQL	0.844%	-0.52%

Reasons Why Python?



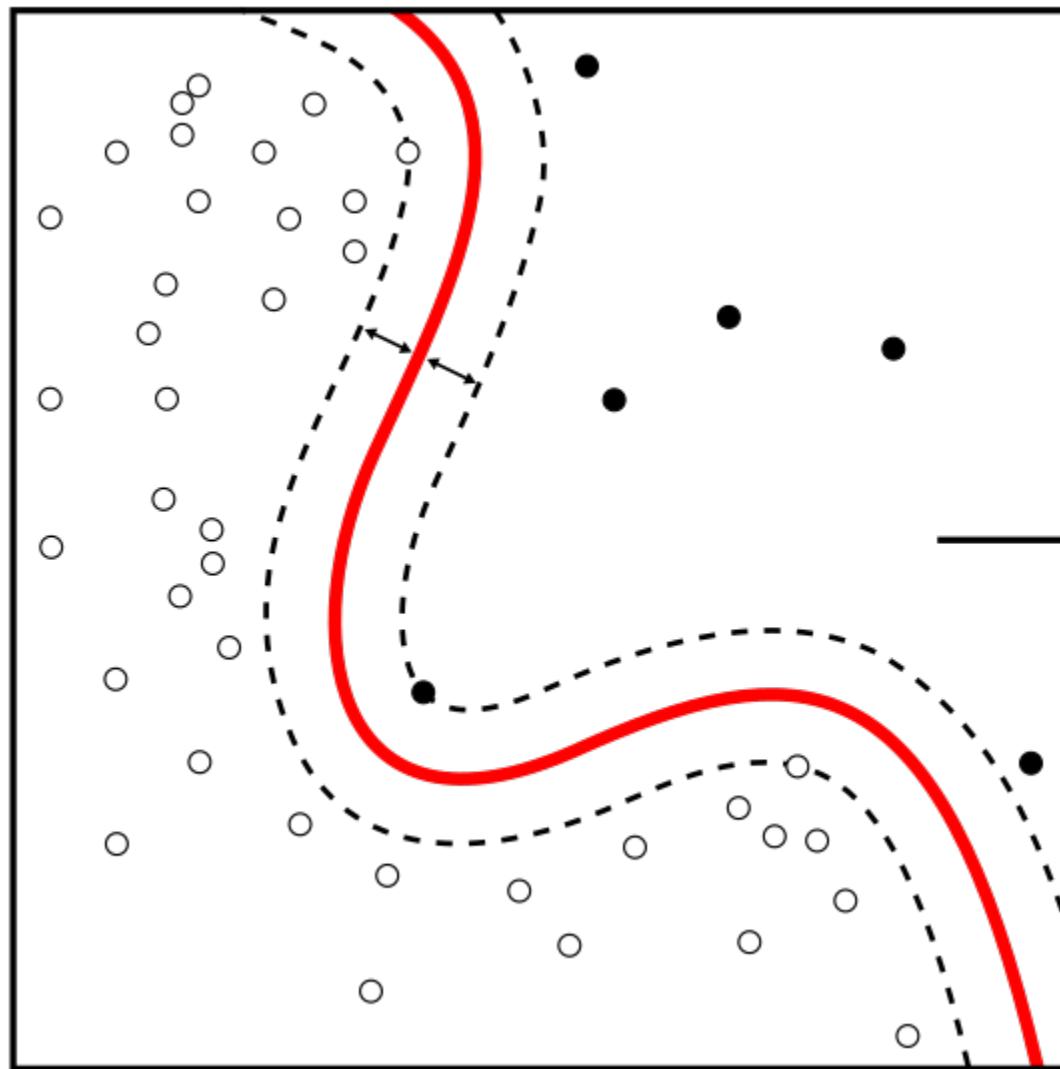


my alarm
my **alarm**

clock dish hot
code soil rout
circle raid hot
shute risk riot
clock visit **not**
did **must**

wake me
wake **me**

up this morning
up **thai** moving
taxis having
this running
tier **morning**
loving



∅

