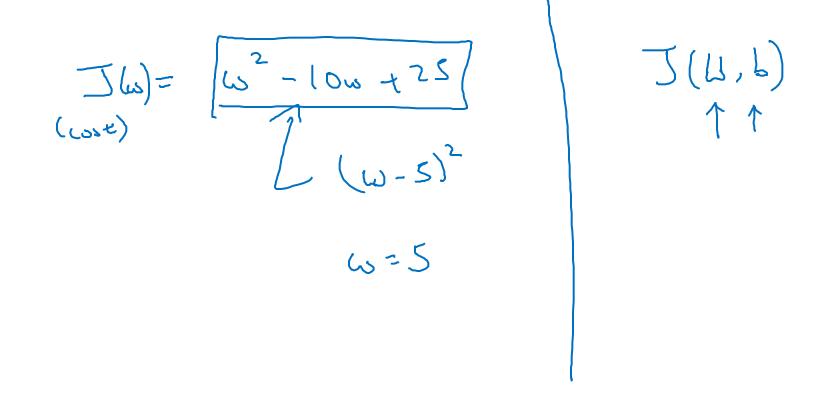


Programming Frameworks

TensorFlow

Motivating problem



```
Code example
import numpy as np
import tensorflow as tf
coefficients = np.array([[1], [-20], [25]])
w = tf.Variable([0],dtype=tf.float32)
x = tf.placeholder(tf.float32, [3,1])
cost = x[0][0]*w**2 + x[1][0]*w + x[2][0]
                                            \# (w-5)**2
train = tf.train.GradientDescentOptimizer(0.01).minimize(cost)
init = tf.global_variables_initializer()
                                            with tf.Session() as session:
session = tf.Session()
                                              session.run(init)
session.run(init)
print(session.run(w))
                                              print(session.run(w))
for i in range (1000):
```

session.run(train, feed_dict={x:coefficients})

print(session.run(w))

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