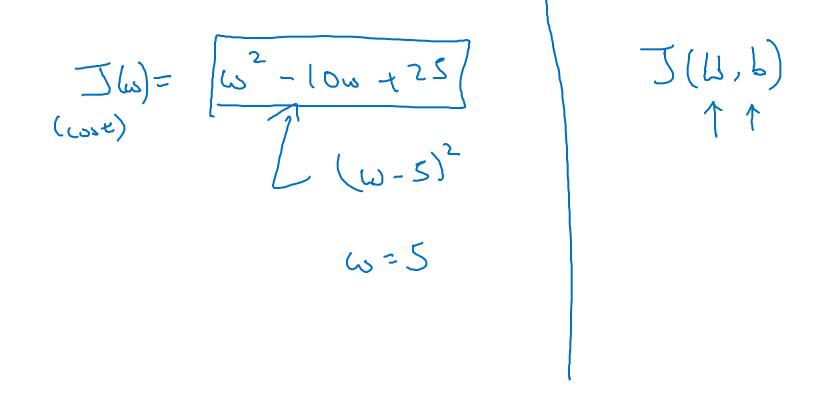


Programming Frameworks

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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