Topics in Machine Learning

Fall 2020, CS185C Section 1

Instructor Information

· Instructor: Fabio Di Troia

· Email: fabio.ditroia@sjsu.edu

Course Description

In this course, we will cover the following machine learning and deep learning topics:

· Hidden Markov Model (HMM)

· Principal Component Analysis (PCA)

· Support Vector Machine (SVM)

· Multilayer Perceptron (MLP)

· Backpropagation

· Convolutional Neural Network (CNN)

· Recurrent Neural Network (RNN)

· Long Short-Term Memory (LSTM)

· Generative Adversarial Network (GAN)

and much, much more!

For each major topic covered, illustrative applications—many drawn from the field of information security—will be discussed. The class will include hands-on lab exercises involving each of the neural network architectures listed above. These labs will be based on Google's TensorFlow. A semester-long team project will be required. Note that this class *cannot* be used as an elective in the MSCS program.