San José State University
Department of Computer Science
CS171, Introduction to Machine Learning, Section 3, Fall, 2022

Course and Contact Information

Instructor:	Saptarshi Sengupta, PhD
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Office Hours:	Thursday, 10:30 AM – 12:30 PM
Class Days/Time:	MW 10:30 AM - 11:45 AM
Classroom:	MacQuarrie Hall 225
Prerequisites:	CS 146 (with a grade of "C-" or better)

Course Format

Faculty Web Page and MYSJSU Messaging

Course materials such as syllabus, handouts, notes, assignment instructions, etc. can be found on Canvas Leaning Management System course login website at http://sjsu.instructure.com. You are responsible for regularly checking with the messaging system through MySJSU at http://my.sjsu.edu (or other communication system as indicated by the instructor) to learn of any updates.

Course Description

The course is an in

Other Readings

Machine Learning with Applications in Information Security, by Mark Stamp, published by Chapman Hall/CRC in 2017.
ISBN-10 : 1138626783
ISBN-13 : 978-1138626782

Deep Learning (Adaptive Computation and Machine Learning series)
Authors: Ian Goodfellow, Yoshua Bengio, Aaron Courville
ISBN-13: 9780262035613
ISBN-10: 0262035618

Other technology requirements / equipment / material

Python 3, Scikitlearn libraries, numpy/scipy, tensorflow/keras, gym, Jupyter notebooks. Installing Anaconda is highly recommended. I will be using Jupyter Notebook in my code demos in class.

Course Requirements and Assignments

SJSU classes are designed such that in order to be successful, it is expected that students will spend a minimum of forty-five hours for each unit of credit (normally three hours per unit per week), including preparing for class, participating in course activities, completing assignments, and so on. More details about student workload can be found in University Policy S12-3 at http://www.sjsu.edu/senate/docs/S12-3.pdf.

Homework, Exams and Final Projects are expected for this class. Homework is due on Canvas by midnight on the due date. Each assigned problem requires a solution and an explanation (or work) detailing how you arrived

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Grading Information

University Policies (Required)

Per University Policy S16-9, university-wide policy information relevant to all courses, such as academic integrity, accommodations, etc. will be available on Office of Graduate and Undergraduate Programs' Syllabus Information web page at http://www.sjsu.edu/gup/syllabusinfo/". Make sure to review these policies and resources.

CS171 / Introduction to Machine Learning, Fall 2022, Course Schedule
The schedule is subject to change with fair notice communicated via Canvas course page

Course Schedule

Week	Date	Topics, Readings, Assignments, Deadlines
1	08/22	Introduction
2	08/24	Why Machine Learning
2	08/29	Supervised Learning: Classification, Regression, Generalization and Model Complexity
3	09/31	Supervised Learning: K Nearest Neighbors, Linear Models, Naïve Bayes
3	09/05	**Labor Day (Campus Closed)**
4	09/07	Supervised Learning: Decision Trees, Ensembles DTs, Kernelized SVM
4	09/12	Supervised Learning: Neural Networks Fundamentals
5	09/14	Supervised Learning: Deep Learning
5	09/19	Supervised Learning: Deep Learning with Convolutional Neural Networks
6	09/21	Supervised Learning: Deep Learning with Recurrent Neural Networks

Week	Date	Topics, Readings, Assignments, Deadlines
13	11/09	Working with Text Data: Stopwords, Rescaling, Model Coefficients
13	11/14	Working with Text Data: n-Grams, Advanced Tokenization, Stemming and Lemmatization
14	11/16	**Exam 2**
14	11/21	Reinforcement Learning: Introduction
15	11/23	**Non-instructional Day (No Classes)**
15	11/28	Reinforcement Learning: Tabular Solution Methods
16	11/30	Reinforcement Learning: Approximate Solution Methods, Course Wrap Up
16	12/05	**Project Presentations:** Monday, December 05, 10:30 AM – 11:45 AM