

Machine Learning Club

ML Club Officers

September 13, 2017

1 Introduction

Machine Learning Club is an organization where members can learn the theory and applications of machine learning, test their skills in intra-club contests and online competitions, and conduct machine learning research. We meet every Wednesday A Block in Room 202.

2 Officers

- Captain: Mihir Patel
- Captain: Nikhil Sardana
- Teaching Coordinator: Justin Zhang
- Teaching Coordinator: Sylesh Suresh

Contact the club officers through Facebook Messenger (preferred) or at tjmachinelearning@gmail.com.

3 Lectures

Lectures will begin with standard machine learning topics before delving into deep learning. We cover not only classical machine learning and deep learning algorithms, but also new and exciting advances. As research comes out throughout the year, we will periodically discuss any interesting developments.

The following lecture schedule is the current plan for the school year. The lecture schedule is subject to change, and the most up to date version can always be found at tjmachinelearning.com/schedule.

Date	Lecture
9/13/17	Introduction to Machine Learning
9/20/17	Decision Trees and Random Forests
9/27/17	Naive Bayes
10/4/17	SVMs
10/11/17	k-Nearest neighbors
10/18/17	Neural Networks 1
10/25/17	Neural Networks 2: Vectorization
11/1/17	Neural Networks 3: Optimizations
11/8/17	Intro to TF, Keras, PyTorch
11/15/17	CNNs: Intro
11/22/17	Deep Nets and Transfer Learning
11/29/17	Working with Special Image Data
12/6/17	Segmentation
12/13/17	Object Detection
12/20/17	Winter Break
12/27/17	Winter Break
1/3/18	Undetermined CNN Lecture
1/10/18	intro to RNNs + LSTM/GRU
1/17/18	Intro to NLP
1/24/18	Newer RNNs
1/31/18	Machine Translation+Linguistics
2/7/18	Time-Series Data: Audio
2/14/18	Intro to GANs
2/21/18	Newer GANs
2/28/18	PixelCNN and PixelRNN
3/7/18	Autoencoders and Markov Chains
3/14/18	Intro to RL and Gym
3/21/18	Deep Reinforcement Learning
3/28/18	Spring Break
4/4/18	Human-in-the-loop RL
4/11 - 5/30	Guest Lectures, Kaggle Competition, ML Research
6/6/18	Elections

4 Quizzes and Exams

Quizzes and exams will be given occasionally to ensure students learn and retain material. These, along with the In-House contests (see Section 5.1) will be used to rank students.

5 Competitions

5.1 In-House Contests

Machine Learning Club will be holding weekly in-house contests through Kaggle Classroom. Details on the specifics of Kaggle Classroom will be given alongside the first contest. Unless otherwise specified, contests will begin on Wednesday evening after Machine Learning Club and run until 11:59:00 P.M. on the following Monday. Students will be ranked based on their achievement in these contests.

5.2 Outside Competitions

As the year progresses, Machine Learning Club members can participate in Kaggle competitions (kaggle.com/competitions). Substantial prize money is awarded to winners of contests, however, students will be competing against anyone in the entire world, so the probability of winning is extremely low. Nevertheless, Kaggle competitions are a valuable learning experience.

6 Research

Machine Learning Club is formalizing its research initiative. This year, anyone who is having trouble with an ML research problem, wants input on the feasibility and/or scope of potential projects, or is looking for general ML help can ask the officers and receive help during club time. The current officers have experience at the highest level of high school research. After the lecture schedule ends in April, students will have more time to work on research projects, applying the knowledge from the lectures to real-world data.

7 The Website

Most information is conveyed through the official Machine Learning Club website, tjmachinelearning.com. Here, you can find the lectures in pdf and web form, along with any presentations, notes, rankings, or additional resources.

8 First Day Form

Go to tjmachinelearning.com and click "Join Us Today" on your phone or computer. Fill out the form.