Schedule and Syllabus

Unless otherwise specified the course lectures and meeting times are:

Wednesday, Friday 3:30-4:20
Location: Gates B12

This syllabus is subject to change according to the pace of the class. Please post on Piazza or email the course staff if you have any question.

Event	Date	Description	Course Materials
	Jan 10 Week 1	No class	Set up Tensorflow (https://github.com/chiphuyen/stanford-tensorflow-tutorials/tree/master/setup) Suggested Readings: Nothing in particular, but you're welcome to read anything you want.
Lecture	Jan 12	**Overview of Tensorflow** Why Tensorflow? Graphs and Sessions	Slides (https://docs.google.com/presentation/d/1dizKPtp9hkuTwVDzoGZdYQb_61ULSsSUvaFfDFuhIc4 usp=sharing) Lecture note (https://docs.google.com/document/d/1gWm3uBnbU6wxZAm0VAiSV_8odzfaE7yEG NO34fI/edit?usp=sharing)
To do	Jan 12	**Check out TensorBoard**	
Lecture	Jan 17 Week 2	**Operations** Basic operations, constants, variables Control dependencies Data pipeline TensorBoard	Slides (https://docs.google.com/presentation/d/1iO_bBL_5REuDQ7RJ2F35vH2BxAiGMocLC6t_N 6eXaE/edit?usp=sharing) Lecture note (https://docs.google.com/document/d/1FSPNZFQsnaUVeTo0OQ2RrEZ0f4el9bIGI5sQALbG_F0/e usp=sharing)
Workshop	Jan 19	**Linear and Logistic Regression** Tensorflow's Optimizers tf.data Example: Birth rate - life expectancy, MNIST dataset	Slides (https://docs.google.com/presentation/d/1lmcQVNAmJrL8x3Iq0VB1mVaka1r6pOIb-TMVTX5Rufc/edit?usp=sharing) Lecture note (https://docs.google.com/document/d/1kMGs68rIHWHifBiqlU3j_2ZkrNj9RquGTe8tJ7eR1sE/edit? usp=sharing)
A1 released	Jan 19	**Assignment #1 released**	Assignment 1 (https://docs.google.com/document/d/1CpBvivgmo_4sMmnlWqjFAXTXKa_bI9dJVSQLPZIu7Vg/e usp=sharing)
Lecture	Jan 24 Week 3	**Eager execution** Guest lecture by Akshay Agrawal (https://www.akshayagrawal.com/) (TensorFlow team) Example: word2vec, linear regression	Slides (https://docs.google.com/presentation/d/1e1gE2JJXipWm1UJgor_y8pHcM8L8oMaCVtvQvZUBlC usp=sharing) Lecture note (https://docs.google.com/document/d/1tLThJGHyMICyXwSIxyZ4D4cZ1hJ1Iuk8WFxe7gBBKa4/e usp=sharing)
Lecture	Jan 26	**Variable sharing and managing experiments** Interfaces Name scope, variable scope Saver object, checkpoints Autodiff Example: word2vec	Slides (https://docs.google.com/presentation/d/1SJMsa4BdOFVRCPD9uwaAqDBYYfgbQcbOm7HaxRV usp=sharing) Lecture note (https://docs.google.com/document/d/1wqp8_-H06oE4zB9CHDwzTx5BfAOMM_6nnNJMSfkazkU/edit?usp=sharing)
A1 Due	Jan 31	**Assignment #1 due**	
Lecture	Jan 31 Week 4	**Introduction to ConvNet**	Slides (https://docs.google.com/presentation/d/15E7NlyMkG8dAMa70i2OluprBDoz3UPyAk5ZpOiCkEq usp=sharing) Lecture note (http://cs231n.github.io/convolutional-networks/) We will be using CS231N's wonderful note

Lecture	Feb 2	**No class**	
A2 released	Feb 7	**Assignment #2 released**	Assignment 2 (https://docs.google.com/document/d/1FpueD-3mScnD0SJQDtwmOb1FrSwo1NGowkXzMwPoLH4/edit?usp=sharing)
Lecture	Feb 7	**Convnet in TensorFlow** Example: image classification	Slides (https://docs.google.com/presentation/d/17VTArfQVtapBqfYecyvp3Kp9HKy8Pw2WI12acYME2nI/usp=sharing) Lecture note (https://docs.google.com/document/d/1ph43FB5fZ_iarPTjIXhdtDvHJOpk4ncI2vDyxnOWcqM/edit?usp=sharing)
Lecture	Feb 9 Week 5	**Convolutional Neural Networks** Discussion of Assignment #2 Example: Style Transfer	Slides (https://docs.google.com/presentation/d/1ftgals7pXNOoNoWe0E9PO27miOpXbHrQIXyBm0YOiy/usp=sharing)
	Feb 14 Week 6	**GANs** Guest lecture by Alec Radford (Research Scientist at OpenAI)	Per Alec's request, slides + code are only available to students in the class
Lecture	Feb 16	**Variational Auto-Encoders** Guest lecture by Danijar Hafner (https://danijar.com) (Google Brain, UCL)	Slides (https://docs.google.com/presentation/d/1VSNlkGcR-b39tMcuREjzZdhYOPvoZudpcbuNlf5hOIM/edit?usp=sharing)
A2 Due	**Feb 20**	**Assignment #2 due**	
Lecture	Feb 21 Week 7	**Recurrent Neural Networks** Example: Character-level Language Modeling	Slides (https://docs.google.com/presentation/d/1QydMhsGFeUzDYZr7dV0tt9WJryleOoKUyJth4ftRDbA/usp=sharing) Lecture note (https://docs.google.com/document/d/1_ZqzBqFMV8YmdC2PmaTXOB9O1BZ14yLNTQd2_Bkff9/usp=sharing)
Lecture	Feb 23	**Seq2seq with Attention** Example: Neural machine translation	Slides (https://docs.google.com/presentation/d/10FcTewIQuHK4u94IPif6kqSbntLT7I038R32uIOG/usp=sharing)
Lecture	Feb 28 Week 8	**Beyond RNNs: Transformer, Tensor2Tensor** Guest lecture by Lukasz Kaiser	Slides (https://docs.google.com/presentation/d/1I7v3GcyHNGW7G3b6c4uTFxTRhpcowYVCOWspnCCI/usp=sharing) Code (https://github.com/tensorflow/tensor2tensor)
A3 released	Mar 2	**Assignment #3 released**	Assignment 3 (https://docs.google.com/document/d/1GJfn2B6EI8JueDiBwzTAdD34d6pC99BSt6vIdOmUCPQ/e/usp=sharing)
	Mar 2	**Dialogue agents**	Slides (https://docs.google.com/presentation/d/1bJhLv_sV81uR3tW90VAqIWvZHCQokHspGHnFaB5Qv/usp=sharing)
Lecture	Mar 7 Week 9	**Reinforcement Learning in Tensorflow** Guest lecture by Frederik Ebert (https://febert.github.io/)	Slides (lectures/CS20_intro_to_RL.pdf)
Lecture	Mar 9	**Keras** Guest lecture by François Chollet (Deep learning researcher at Google, author of Keras)	Slides (lectures/march9guestlecture.pdf)
A3 Due	Mar 15	**Assignment #3 due**	
Demo	Mar 16	**Demo**	