CMPE 679 Deep Learning

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TEXTBOOK
There is no required textbook. Students are expected to attend class and study the assigned materials. Lecture slides and references are posted on https://mycourses.rit.edu
Optional Online Textbooks :
"Neural Networks and Deep Learning" http://neuralnetworksanddeeplearning.com/
"Deep Learning" (2016) http://www.deeplearningbook.org/

GRADING
Homework 30%; Midterm 10%; Final 20%;
Final Project (proposal/paper/presentation) 35%; Class Evaluation 5%.

OFFICE HOURS
Tuesday and Thursday 4:00-5:00pm or by appointment.
TA's will offer office hours upon request.

TOPICS
- Deep learning basics
- Attention/Transformer
- Self-supervised learning
- Domain Adaptation
- Compression
- CNN/RNN
- Generative model
- Explainable AI/Adversarial attack
- Reinforcement learning
- Meta Learning

COURSE POLICY
- *Course Prerequisites*: CMPE 677 Machine Intelligence or equivalent. Knowledge of Digital Signal Processing, Linear Algebra, Probability and Statistics, and Applied Programming.
- *Exam policy*: If due to unforeseen circumstances, e.g. illness or emergency, you cannot take an exam or turn in an assignment, contact me **before** the start of the exam or due date/time. No makeup exams are given, but when needed alternative arrangements are made.

RIT required policies
- **Academic integrity statement:** All conduct in this course is governed by the KGCOE Academic Honesty Policy in the KGCOE Graduate Student Handbook, RIT Honor Code (P03.0), and RIT Student Academic Integrity Policy (D08.0). Read the above policies at:

https://www.rit.edu/engineering/about/student-resources
https://www.rit.edu/academicaffairs/policiesmanual/p030
https://www.rit.edu/academicaffairs/policiesmanual/d080

- **RIT's official policy on attendance**: Lecture time is scheduled TR 12:30-145pm. The RIT policy on attendance is as follows. "Absences, for whatever reason, do not relieve students of their responsibility for fulfilling normal requirements in any course. In particular, it is the student's responsibility to make individual arrangements in advance of missing class due to personal obligations such as religious holidays, job interviews, athletic contests, etc., in order that he or she may meet his or her obligations without penalty for missing class." (RIT Governance Policy D4.0, Section I.B).
https://www.rit.edu/academicaffairs/policiesmanual/d040

- **Academic adjustments statement:** RIT is committed to providing academic adjustments to students with disabilities. If you would like to request academic adjustments such as testing modifications due to a disability, please contact the Disability Services Office (DSO). Contact information for the DSO and information about how to request adjustments can be found at http://www.rit.edu/dso After you receive academic adjustment approval, it is imperative that you contact the instructor as early as possible to work out whatever arrangement is necessary.

- **Title IX statement:** Title IX violations are taken very seriously at RIT. RIT is committed to investigate complaints of sexual discrimination, sexual harassment, sexual assault, and other sexual misconduct, and to ensure that appropriate action is taken to stop the behavior, prevent its recurrence, and remedy its effects. Title IX rights and resources at RIT can be found at http://www.rit.edu/fa/compliance/content/title-ix