COEN 240 Machine Learning

Preliminaries

1. *Instructor*: Nirdosh Bhatnagar

2. *email*: nbhatnagar@scu.edu

3. *Office Hours*: As per student's convenience.

4. *Recommended References*

   (a) *Machine Learning*: *A Bayesian and Optimization Perspective*, Second Edition, by Sergios Theodoridis, Academic Press; 2020.

   (b) *The Elements of Statistical Learning*, by Trevor Hastie, Robert Tibshirani, Jerome Friedman. Springer, 2011.

   (c) *Deep Learning (Adaptive Computation and Machine Learning series) Illustrated Edition,* by Ian Goodfellow, Yoshua Bengio, and Aaron Courville, MIT Press, 2016.

   (d) *Machine Learning Refined*: *Foundations, Algorithms, and Applications*, Second Edition, by Jeremy Watt, Reza Borhani, and Aggelos K. Katsaggelos, Cambridge University Press, 2020.

   (e) *Introduction to Machine Learning*, Fourth Edition, (Adaptive Computation and Machine Learning series), Ethem Alpaydin, 2020, MIT Press.

   (f) *Bayesian Reasoning and Machine Learning*, by David Barber, Cambridge University Press, 2012.

   (g) *Machine Learning*: *A Probabilistic Perspective*, by Kevin P. Murphy, The MIT Press, 2012.

   (h) *Pattern Recognition and Machine Learning*, by Christopher Bishop. Springer, 2007.

   (i) *Learning Python*, Fifth Edition, by Mark Lutz, O'Reilly Media, Inc., 2013.

5. The course is largely driven by class notes, which will be posted on the Camino. *The notes should neither be posted on the Internet, nor shared with your friends.*

6. *Prerequisite*: Ability to code in any high-level language. Basic knowledge of linear algebra, calculus, and probability theory is recommended.

7. *Assignments / Projects* : There are ten assignments in total. The last day for submitting any assignment will also be indicated.

8. *Grade distribution.*

   (a) Assignments / Projects 35%

   (b) Mid-term Examination 25%

(c) Final Examination 40%

9. Good Grade $\iff$ Submit assignments on or before the due dates.

Important: *The pdf files should not be posted on the Internet. You should also not share these with your friends.*