## **Course Announcement**

## **EECS 498: Applied computational machine learning**



Course Number: EECS 498 – 4 credit hours

Instructor: Prof. Raj Rao Nadakuditi

Prerequisites: EECS 301 or MATH 425 or STATS 250 or STATS 412 or STATS 426 or IOE 265 or equivalent. Programming experience is required – we will be coding in every lecture/lab

Description: Theory and application of machine learning algorithms. Theoretical topics include subspaces, eigenvalue and singular value decomposition, projection theorem, constrained, regularized and unconstrained linear and non-linear least squares techniques, iterative algorithms and deep feedforward and convolutional neural networks. Applications such as image deblurring, image segmentation and compression, recommender systems and handwritten digit recognition. Greater emphasis on applications than in EECS 505. Every lecture will consist of a computer based lab component to emphasize how the mathematics and code come together and how we can computationally reason about when we expect algorithm to work well, when it will fail and how we can or cannot make it robust to the computationally and theoretically investigated failure modes.