

## **Generative Adversarial Networks for Pattern Generation and Classification**

### **Course Description**

Recently, Generative Adversarial Networks (GANs) have emerged as powerful tools for generating images and videos with applications in pattern generation and classification. Applications of pattern generation GANs are in data augmentation with pre-specified characteristics for training robust deep networks. Applications in pattern classification are in domain adaptation and transfer learning. This course will cover the fundamentals of GANs including training and convergence challenges and applications in image and video generation, semantic segmentation and domain adaptation.

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Class hours: Tuesdays: 4-5:30 p.m.

Course credit: 1 credit

Course load: Each registered student will give a presentation on an assigned topic taken from current papers. Group projects involving GAN designs for computer vision applications will also be assigned.