

29-Mar-2017

SUMMARY OF CLASS 29-MARCH-2017

1. HOUSEKEEPING ISSUES DISCUSSED

A. Last class

- i. April 19
- ii. Optional exam discussed
 - 1. *Notify by next class*
- iii. April 7 last day to drop
- iv. Course term project
 - 1. *Base paper*
 - 2. *3000 words not including references*
 - 3. *Slides*
 - 4. *Due may 01*

2. TRANSFER LEARNING

Sebastianruder.com/transfer-learning/.

Karl Weiss presented an overview of Transfer Learning. There may be times we can't find training data (rare, expensive, hard to obtain). Transfer learning tries to find similarities in other data. An example of transfer learning in real life was presented using text data on reviews of hotels and reviews of phones and how the learning can be transferred to reviews about recipes.

With Homogeneous learning the feature space is the same for the source and target. We may have differences within the feature space that we need to isolate and account for. An example of text was given. Transfer learning in text processing where we learn text and language features in one language and transfer that knowledge to another language.

Oscar Day presented Transfer Learning through a heterogeneous learning model. He began with a notation that with classic machine learning assumes that the data used to fit and test the model has similar attributes and qualities. The real world is not that symmetric. It may be difficult, expensive or illegal to collect sufficient data to create the model. Transfer learning may be used to transfer knowledge from an environment labeled to one that is not.

Heterogeneous learning involves training when classes in the source domain are represented by different attributes than your target domain. To train, heterogeneous learning creates a symmetric transfer which uses a common subspace for source and target or asymmetric transfer which adapts the source attributes to the target space. Oscar concluded stating that it is a challenging field with many real world adaptations.