Data Mining and Social Network Analysis

Instructor: Jen-Wei Huang

Office: 92528 in the EE building
jwhuang@mail.ncku

Instructor

- Jen-Wei Huang (黃仁暐)

- Office: 92528 in the EE building
- Email: jwhuang@mail.ncku
- Knowledge and Information Discovery (KID) Lab
- Web site: https://kid.ee.ncku.edu.tw

Research Areas

Data Mining / Machine Learning / Artificial Intelligence

- Social Network Analysis
- Spatio-temporal Data Mining
- Multimedia Information Retrieval
- FinTech & Bioinformatics
- Big Data Analysis

Syllabus

- Introduction to DM and SNA
- Data Mining
  - Mining association rules
  - Mining sequential patterns
  - Data classification
  - Data clustering
- Social Network Analysis
  - Properties and Models
  - Graph Mining
  - Community Detection
  - Applications

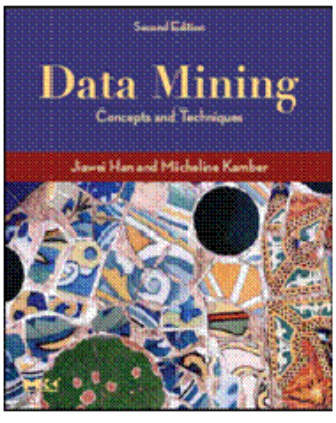
Grades

- Homework 30%
- In-class Presentation and Performance 30%
- Final Project 40%

- could be changed according to class performance

References

- J.Han, and M.Kamber, Data Mining : Concepts and Techniques, 2/e, Morgan Kaufmann
  - http://www.amazon.com/Data-Mining-Concepts-Techniques-Management/dp/1558609016/



* http://www.cs.uiuc.edu/homes/hanj/bk2/

References

- J. Scott, Social Network Analysis, SAGE Publications Ltd, 3rd ed., 2012
- J. Scott, Social Network Analysis: A Handbook, SAGE Publications Ltd, 2nd ed., 2000
- S. Chakrabarti, Mining the Web – Discovering Knowledge from Hypertext Data, Morgan Kaufmann Publisher, 2002
- M.E.J. Newman, Networks – An introduction, Oxford University Press, 2010

Paper Presentation

- Each student needs to present 1 paper from the paper list in the class
- The presentation time is 30 minutes.

Final Project

- 3 members form a team.
- Each team has to select a topic of the social network analysis from a series of papers.
- The topic should contain a major work from top conferences or journals within 5 years.

Requirements

- A project proposal within 10 minutes, which should be revised by me in advance.
- The implementation of a milestone algorithm.
- A 35-minute presentation with 5-minute demo.
- A formal report in the paper format.

Top Conferences

- SIGMOD, VLDB, SIGKDD, SIGIR, EDBT, WWW
- ICDE, SDM, CIKM, ICDM, PKDD, PAKDD

- SocialCom, ASONAM, WSDM, SCA

- ACM Multimedia, ICME, MDM
- SIGCOMM, MOBICOM, INFOCOM, GLOBECOM, ICDCS, ICC
- Machine learning, Artificial Intelligence
  - ICML, CVPR, NIPS, AAAI, IJCAI, COLT

Top Journals

- KDD Explorations
- VLDB Journal (VLDBJ)
- IEEE Transactions on Knowledge and Data Engineering (TKDE)
- ACM Transactions on Knowledge Discovery and Data (TKDD)
- Knowledge and Information Systems (KAIS)
- Data Mining and Knowledge Discovery (DMKD)
- ACM Transactions on Database Systems (TODS)
- ACM Transactions on Information Systems (TOIS)
- Journal of Intelligent Systems
- The International Journal of Artificial Intelligence
- Journal of Intelligent Information Systems
- Machine Learning
- IEEE Transactions on Pattern Analysis and Machine Intelligence

TA

- 馬豪尚 Allen Ma
  - ablove904@gmail.com
  - Office: R95914

Creativity

- Entrance
  - http://www.youtube.com/watch?v=4-94JhLEiN0
- Proposal
  - http://www.youtube.com/watch?v=PZNRc9WWvbU
- Deadline
  - http://www.youtube.com/watch?v=-ZtxHOfmhH4
  - http://www.youtube.com/watch?v=ArJYvaCCB3c
  - http://www.youtube.com/watch?v=8AW4W4K8MWY
  - http://www.bangyaoliu.com/

Creativity

- Skier
  - http://www.youtube.com/watch?v=uP2bcnLvprc
- Amazing tailor
  - http://www.youtube.com/watch?v=4tIZ35DVlNQ