Welcome To The One And Only
10-610 The KDD Lab

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Administrative Information

- Web page: http://www.cs.cmu.edu/~10610
- Time/date: Friday, 1-4pm, Wean 4615A
- No TA ☹

- Is time/date okay?
- Need replacement date for Feb 2

Goals of the KDD Lab

- To teach you the mechanics of KDD research
  - KDD Research and Evaluation
  - Proposal writing
  - Paper writing
  - Presenting your work

Class Outline

- Proposals
  - Write, Review, Revise, Present

- Do Research

- Research Papers
  - Write, Review, Revise, Present

Requirements

- Carry out project
- Present twice (proposal, final report)
- Writing
  - Project proposal
  - Project proposal revision
  - Research paper
  - Research paper revision
- Reviewing
  - All proposals
  - All papers
  - A scientific paper (published)
- Class Presence: all but two sessions (send me mail)
- No exams

Your Project

Suitable projects are:
  - Your research project
  - A past class project (eg, 15-781 class project)
  - Any other project with a faculty mentor
  - Any other scientific research project

But: Each student has to perform his own project. (overlap is okay).

First Assignment

- Write Research Proposal
  - Negotiate topic with Sebastian via Email
  - Write proposal
  - Review other students' proposals
  - Revise your proposal based on feedback
  - Explain in which way the feedback was incorporated

A Brief Guide to Writing Proposals

- …this is extremely ad hoc ☺

Lesson # 1

- Put yourself into the position of the reviewer!

Background Expertise

Reviewers are not familiar with your area:
- Problem motivation
- State of the art
- Background material
- Notation
- Potential application domains
- (Your credibility as a researcher)
- (Your institution's track record and facilities)

Reviewers are Overworked

- Don't expect them to pay attention to details
- Don't expect them think/read past page two
- Don't expect them to read 10pt fonts
- Present one idea, not two, three, ...
- Pick informative title
- A picture is worth 1000 words
- Be concise! Get to the point!
- Run a spell/grammar checker
- Use terminology consistently

Questions Any Proposal Must Answer

- What is the problem?
- Why does it matter?
- What is the technical approach?
- Why will it work?
- Why will it help solve the problem?
- How will the research be organized?
- How will you validate your research?
- What will be the impact of your research?
- Why do this research now?
- (Why is the proposer qualified?)

(Advice for Proposals to Funding Agencies)

- Funding Agencies have specific goals
  - Familiarize yourself with their mission
  - Pitch your proposal to meet their goals

Your Assignment

- 8 pages plus references, 1 inch margin, font 11pt or 12pt, single column, regular spacing
- First page:
  - Title
  - Name and address
  - Abstract (300 words max)

The Proposal

- Abstract (~300 words)
  - Goals, approach, expected results, impact (this is like a mini-proposal)
- Introduction (~1 page)
  - Problem and goals(!), summary approach, results/deliverables, impact
- Prior Work (0.5 – 1 pages)
  - Don't just say what's been done. Argue why what you propose hasn't been done but is important for the problem described in the introduction. Provide 20+ refs and discuss at least 8
- Approach (~5 pages)
  - Prior work: background tutorial (if necessary), prior results
  - Proposed work: technical approach, anticipated results, strategy of evaluating your research
- Work Plan (0.5-1 pages)
  - List of what you will do when – this is very important!
- (Qualifications)
- Summary (0.5 pages)
  - Relate proposed approach to goals, Substantiate claims on impact
- References

Your Next Tasks

- Negotiate your project with thrun@cs.cmu.edu
- Read example research proposal (on Web)
- Write Proposal consistent with guidelines
- Submit electronically to thrun@cs.cmu.edu by Friday Feb 2