CSCI 495: capstone project

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- what
- how
- when
- team vs individual
- grading

- semester-long project
- can be
  - an existing or new method applied to a specific problem
  - literature review with method comparison: experiments
  - must involve at least one subfield/topic of computer science
- deliverables: software + report(s) + presentation(s)

- REQUIRED by the end of the semester:
  Completion of the CS major field test (ETS)
  - Location/Time: TBA

OBJECTIVES

- Application of what you have learnt in CS (one or more subfields)
- Concept, design, implementation
- Written skills
- Oral presentation skills
- Professional/work ethics
- Deadlines
- Grading = *f*(project challenges)

- B.Y.O.P: **b**ring **y**our **o**wn **p**roposal

- Required: one advisor from CS or closely related field (after instructor permission)

- *No website construction, no "front-end" (interfaces etc.)*
- problem statement:
  - don't think about applications only
  - can be a general problem, e.g.,
    - how to better classify data of a particular nature
    - how to predict a sequence of events
    - how to use outliers in a classification problem
    - education methods for CS undergrads
- data: you must have or find the data
- cite your sources

- B.Y.O.P + justify
- consult with the instructor
- literature review: what exists, pros/cons, existing results
- establish a strong motivation for your project
- work on the (/your) core method
- one step at a time: first get initial results, validate, and then proceed to the next step
- your results should justify your motivation claims

- individual or team projects
- teams ≤ 3 people
- discrete roles = smaller individual projects
- if a team doesn't specify the roles exactly, the team "loses"
- reports are individual not per team

		pts.
introduction to the capstone project -- instructions		
(no class) project proposal – 1-page report	R1	10
revised proposal – revised 1-page report + presentation (all)	R2	10
midterm – presentations (all)	R3	30
ETS Major Field Test		
preparation for final report and presentation		
final – presentations	R4	50
final – presentation (cnt'd) & Final report		

- Skipping an assignment = 0 for the assignment
- Second time skipping assignment = F for class
- Fail to complete major field test = F for class

- Academic integrity & sexual misconduct:

  please see the Syllabus section on Oncourse site, follow the links, and read carefully the related websites.

- All reports should be formatted as,
  - 1 inch margins
  - Arial 11pt fonts
  - single spacing
- top: title, author, team (if any)
- for teams: each report should be specific to the individual's work, while the team project should be only briefly described
- not following any of the above will result to loss of points
- "1-page report" = 1 **full page** report
- Exact formatting and meeting the exact deadlines plays crucial role in grading.
- When no page number or limit are explicitly stated, the report can be of any length

- Oral presentations will be:
  - 5 mins long (strictly), unless instructed otherwise

    ...the instructor will interrupt after 5 mins
  - prepared with slides
  - in formal, technical terms
  - graded based on effectiveness, clarity, technical details
  - on recent advances and not repetition of previously presented material

key terms

- Project proposal

  problem statement, motivation, initial thoughts
- Revised proposal

  after looking into the specific problem, consider duration, challenges, data, literature/existing methodology. If no revisions, submit the same proposal
- Literature review

  for every problem, there have been some solutions, exact or relevant, as systems (commercial) or in research papers and manuals. Study them, find pros, cons, constraints etc, and describe them.
- Results for motivation

  justify why you are choosing a specific solution, given other existing solutions. The justification has to be experimental, theoretical (if Math is involved), or practical (e.g., application constraints). Your chosen solution has to tackle specific challenges that others do not tackle.