Final Project (Proposals)

Many fantastic class projects come from students picking either an application area that they're interested in or picking some subfield of data-driven mathematical modeling that they want to explore more. So, pick something that you can get excited and passionate about! Be brave rather than timid and do feel free to propose ambitious things that you're excited about. (Just be sure to ask me for help if you're uncertain how to best get started.)

Deadline to submit Proposals: November 10th at 11:59 PM

In the project proposal, you'll pick a project idea to work on early and receive feedback from me or Alex. If your proposed project will be done jointly with a different class' project, you should obtain approval from the other instructor and approval from me. Please come to my office hours to discuss with me if you would like to do a joint project. You should submit your proposals on Gradescope.

In the proposal, below your project title, include the project category. The category can be one of:

- **Computer Graphics**
- **Markov Chains**
- **Leslie Population Models**
- **Graphs (Combinatoric)**
- **Google Rank Page**
- **Cryptography**
- **Euler Angles**
- **Kinematics**
- **Continuum solids/fluid Mechanics**
- **Curves' Fitting**
- **Dynamic systems**
- **Information theory and Applications**
- **Biology,**
- **Social justice,**
- **Epidemiology,**
- **Economics,**
- **Finance,**
- **Sports,**
- **Heat transfers,**
- **Wave propagation,**
- **Chemistry,**
- **Material science,**
- **Machine learning**
- **Data-driven modeling algorithms**
- **Data-driven design**
- **Theories in AI and algorithms development**
- **Others (Please specify!)**

Your project proposal should include the following information:

- What is the problem that you will be investigating? Why is it interesting?
- What are the challenges of this project?
- What dataset are you using? How do you plan to collect it?
- What method or algorithm are you proposing? If there are existing implementations, will you use them and how? How do you plan to improve or modify such implementations?
- What reading will you examine to provide context and background? If relevant, what papers do you refer to?
- How will you evaluate your results? Qualitatively, what kind of results do you expect (e.g. plots or figures)? Quantitatively, what kind of analysis will you use to evaluate and/or compare your results (e.g. what performance metrics or statistical tests)