

## Extra credit project

I invite you to explore the applications of linear algebra as an extra credit project. If you are more interested in pure math and not applications, but want to do the project, I recommend choosing section 1.8, 2.2 or 2.5.

### **Assignment:**

1. Choose one of the following sections:
  - 1.8 - LU factorization (algorithms)
  - 2.1 - Introduction to coding (computer science)
  - 2.2 - Graph theory (pure math)
  - 2.3 - Computer graphics (computer science)
  - 2.4 - Electrical circuits (physics)
  - 2.5 - Markov chains (probability)
  - 2.6 - Linear Economic models (economics)
  - 2.7 - Introduction to wavelets (physics)

After choosing which section you want to study, browse through chapter 1 and look at the ‘preview of an application’ sections to see if any apply (for example, if you choose section 2.2, there is a preview to this application in section 1.4).

2. Read your section. Write a one page summary describing how linear algebra is used to study this application.
3. Work out a few of the exercises in your section and attach to your one page summary. If you have trouble deciding which problems to work out, ask me in office hours or by email.

**Grading:** this project can add 4% to your total grade (about the amount of one homework assignment). Grading will be based on your ability to convey your understanding of the application, and complete solutions to a few exercises from the section.

**Due date:** the last day of class, Friday, December 5th. No late projects will be accepted.