

Math 5327 Presentations

Topics must relate linear algebra to an application. Presentations can be done individually but also in teams of up to 3 people; I will have somewhat higher expectations for team presentations. They will be evaluated for linear algebra content, application content, and quality of presentation.

Here are some possible topics - you can also come up with your own.

- The fast fourier transform: what it is, how it works, what its used for, variations.
- ‘Small world’ matrices.
- The SVD in image processing or other applications. This is closely related to principal components analysis, which has been used in a myriad of applications.
- Internet searches and page rankings.
- Card shuffling and matrix norms.
- Fractals, iterated function systems, and linear transformations.
- Special types of matrices/transformations that we have not fully explored: Toeplitz, Circulant, Symplectic, etc.
- Population modeling with stage-based matrices.
- Linear economic models.