

Final Project: Topics in Expanders and High-Dimensional Expanders

Overview

Choose a topic related to *expanders* or *high-dimensional expanders* that goes beyond the material covered in class. Your goal is to learn one focused topic deeply, present the key definitions and results, and relate them to what we have learned from this class.

Final Project Report

- Length: **5–10 pages**.
- Typeset in \LaTeX ; include references (Bib \TeX or a bibliography section).
- Figures and examples are encouraged where helpful.
- The report should include:
 1. Clear statement of the problem or topic and motivation.
 2. Precise definitions of central concepts.
 3. A summary of key theorems and proofs (full proofs or sketches as appropriate).
 4. Discussion of applications or connections to other topics.
 5. Bibliography with full citations.
- Grading (rough breakdown):
 - Understanding and correctness: 40%
 - Clarity and exposition: 30%
 - Depth / connections: 20%
 - References and formatting: 10%

Submission

Submit a single PDF of your report via **Gradescope** by **December 5 at 5:00 PM**.

Notes

If you encounter difficulties in searching or understanding the literature, or would like feedback on a draft before the final submission, please email me before our last lecture on **November 24**. We can then discuss your questions during that class. After that date, you are still welcome to email me, but I may not be able to respond promptly. Therefore, start early and reach out with questions well in advance.

Good luck and have fun!