## Combinatorial Optimization

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- 1. Introduction to the Maximum Flow problem.
- 2. Difference between my coverage and the text coverage.
- 3. Linear Programs with bounds on the variables.
- 4. Flow networks.
- 5. Definition of flow.
- 6. How to reduce various special cases to my case.
  - (a) No parallel edges.
  - (b) Multiple sources and sinks.
  - (c) Vertex capacities.
  - (d) Lower bounds on flows.
- 7. The Ford-Fulkerson procedure: Residual networks, Augmenting paths and cuts.
- 8. The actual procedure.
- 9. Residual network  $(G_f)$ .
- 10. Argue that  $|E_f| \leq 2 \cdot |E|$ .
- 11. The augmentation of flow f by f'.
- 12. Lemma 26.1.