Combinatorial Optimization

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- 1. Review of Max Flows.
- 2. The Minimum Spanning tree problem.
- 3. File storage problem. Cost of accessing k^{th} file is $\cot(k) = \sum_{i=1}^{k} l_i$. Assuming all files are equally likely to be accessed, we define $\mathbf{E}[\cot] = \sum_{k=1}^{n} \frac{\cot[k]}{n} = \sum_{k=1}^{n} \sum_{i=1}^{k} \frac{l_i}{n}$.
- 4. Scheduling tasks to minimize the number of machines. Start time, finish time, conflicting schedule.
- 5. Scheduling tasks to maximize the number of tasks, given a fixed set of machines.
- 6. The fractional knapsack problem.
- 7. The theory underlying greedy algorithms.
- 8. Independence axioms.