



innershell

Submodularity

2

3

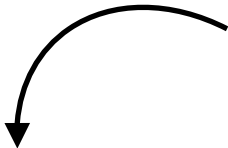
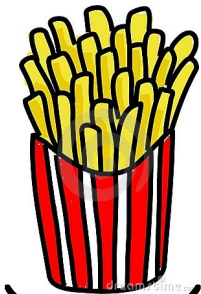
- Set functions with the diminishing returns property:

- **Intuition:** Buying "similar" items together is cheaper

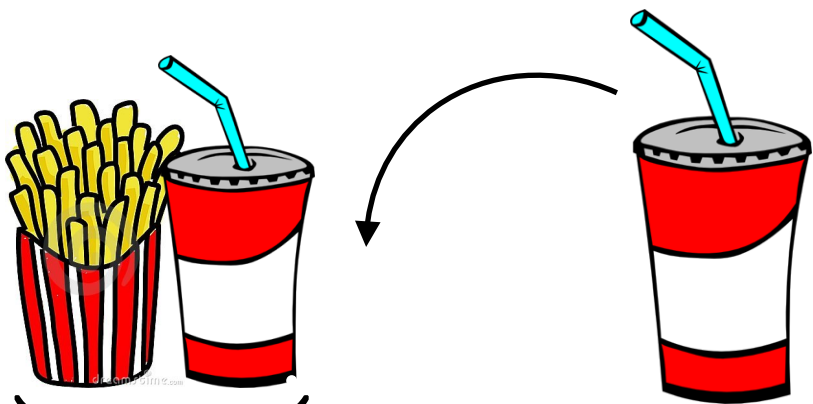
• $\text{items} \equiv \text{matches}$

• "similar items" = class-embeds

$$F(A \cup \{s\}) - F(A) \geq F(B \cup \{s\}) - F(B) \quad \forall A \subseteq B$$



A



B

SidesCredit: S. J. Degge/Ka

Submodularity in a nutshell

- Set functions with the **diminishing returns** property:

$$F(A \cup \{s\}) - F(A) \geq F(B \cup \{s\}) - F(B) \quad \forall A \subseteq B$$



- Intuition:** Buying "similar" items together is cheaper
- Items = matches
- "Similar items" = class-coherent matches

Matching with Submodular Costs

