[redacted]

Beyond Linear Costs

Structured OT

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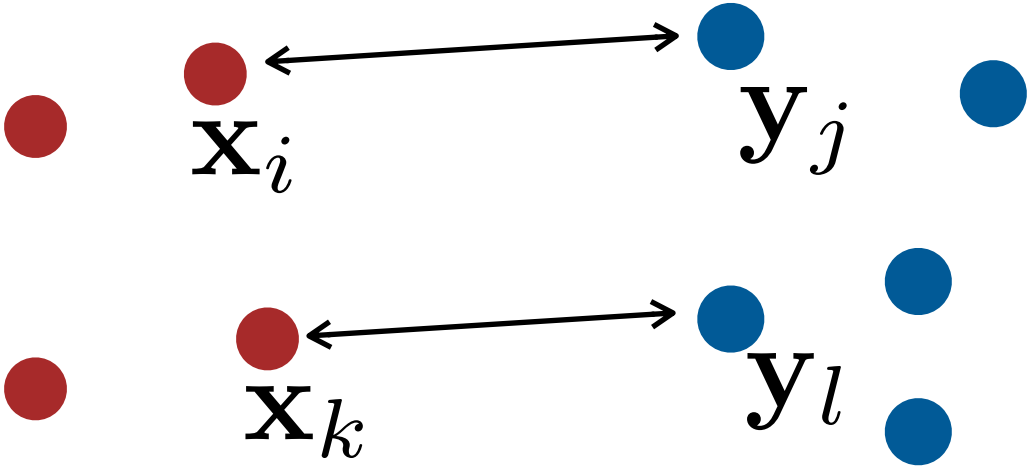
- How can we encode **interactions** in the cost function?

- Think of cost as function over set of matches

- Want: cost of additional match lower if "coherent" with previous matches


$\mathbf{x}_i$
$\mathbf{y}_j$
$\mathbf{x}_k$
$\mathbf{y}_l$

Set Function $F : \{0,1\}^{nm} \mapsto \mathbb{R}^+$

$$M = \{(i, j), (k, l)\}$$

$F(M) :=$ cost of this matching

Cost function is **linear**,
separable in Γ_{ij}

$$\min_{\Gamma \in \Pi(\mathbf{a},\mathbf{b})} \sum_{i,j} \Gamma_{ij} C_{ij}$$

Classic OT Formulation:

Structured OT
Beyond Linear Costs

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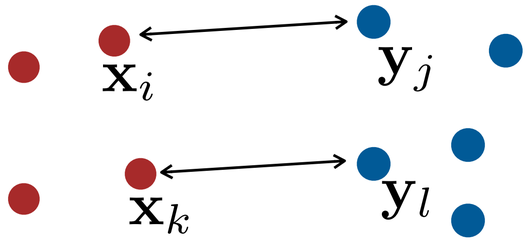

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Submodularity
in a nutshell

Slide Credit: S. Jegelka