Identifying Human Faces

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Nov 29, 2010
Identity Tags by Humans

- **Objective:** Tag each human face with his/her identity
- **Challenge:** Laborious if many photos
- **Solution:** Mechanical Turk, CAPTCHA, etc.
- **Challenge:** The labelers don't know the people
Proposed Solution

- Who's who without names...

- Person A:

- Person B:

- For social networking applications, obtaining name maps (A, Donald Rumsfeld), (B, Ariel Sharon), etc. is not difficult and not tedious.
User Input (Pairwise Equivalence)

- User Input I: 1, 2, 2, 1, 3
- User Input II: 1, 2, 3, 2, 3
User Input
Graph Cut vs Multicut

- Given green nodes
- Remove edges to disconnect green nodes

- Given: Specified pairs. Ex, (I1, I3), (I1, I2)
- Remove edges so each pair is disconnected
Graph Cut vs Multicut

  - Optimality factor: 2
  - Tree: Can be solved exactly.

- Vazirani (1996)
  - Optimality factor: \( \log(k) \). \( k \) is number of pairs.
  - Hard even for trees of height 1 and unit caps (Vazirani, 1996)