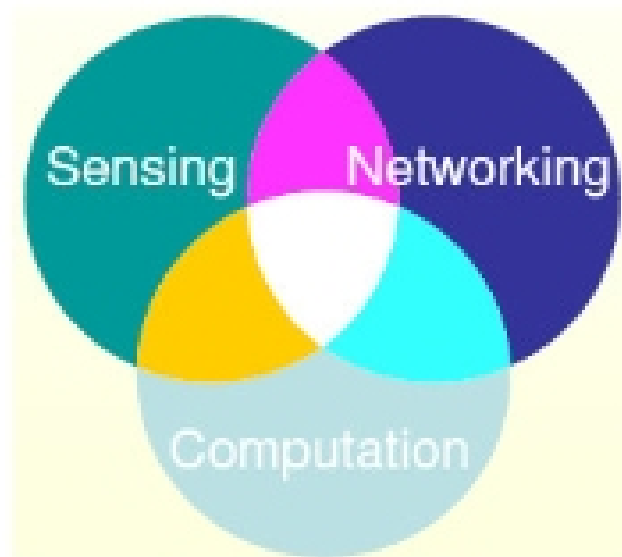


# Introduction to game theory

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# Game theory

- How selfish agents interact.
- Chess, poker: both parties want to win.
- Traditionally studied in economics, sociology, etc.
- Model the physical world.
- How do selfish agents behave? how does cooperation appear?

# Game theory in CS

- Selfish agents: computers, ISPs, cell phones.
- Context: Internet, ad hoc networks.
- Decentralized ownership and operation.
- Passive side: study the behaviors of selfish parties.
  - Nash equilibrium, i.e., stable state.
- Active side: design mechanisms that motivate selfish agents to act as desired.
  - Auction, pricing.