Imitation Learning in Games

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Predict Behaviour
- From few observations
- Of potentially limited or irrational players

Infer Preferences
- Identify important features
- Reason about irrationality

Generalize Behaviour
- Extrapolate expert knowledge
- Anticipate effects of environmental changes

Example: Path Planning
Which route will a person prefer?

Possible Criteria:
- Prefer simple terrain
- Avoid congestion
- Optimize gas usage
- Minimize driving time
- Select easy routes...

Example: Auctions
What watch might a person buy?

Features:
- Item quality
- Price
- Expected lifetime
- Extra functionality
- Brand
- Material...

Example: Traffic Control
How will driver’s respond to a different light pattern?

Features:
- Congestion
- Time of day
- Speed limit