

Learning State Representations for Query Optimization with Deep Reinforcement Learning

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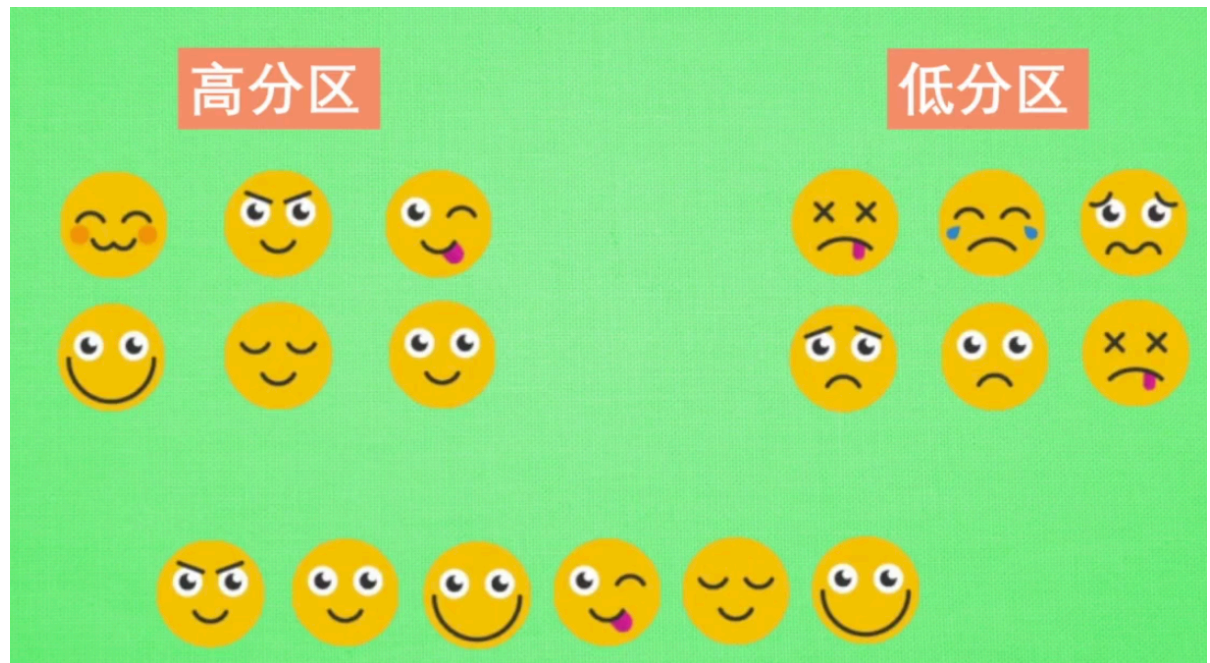
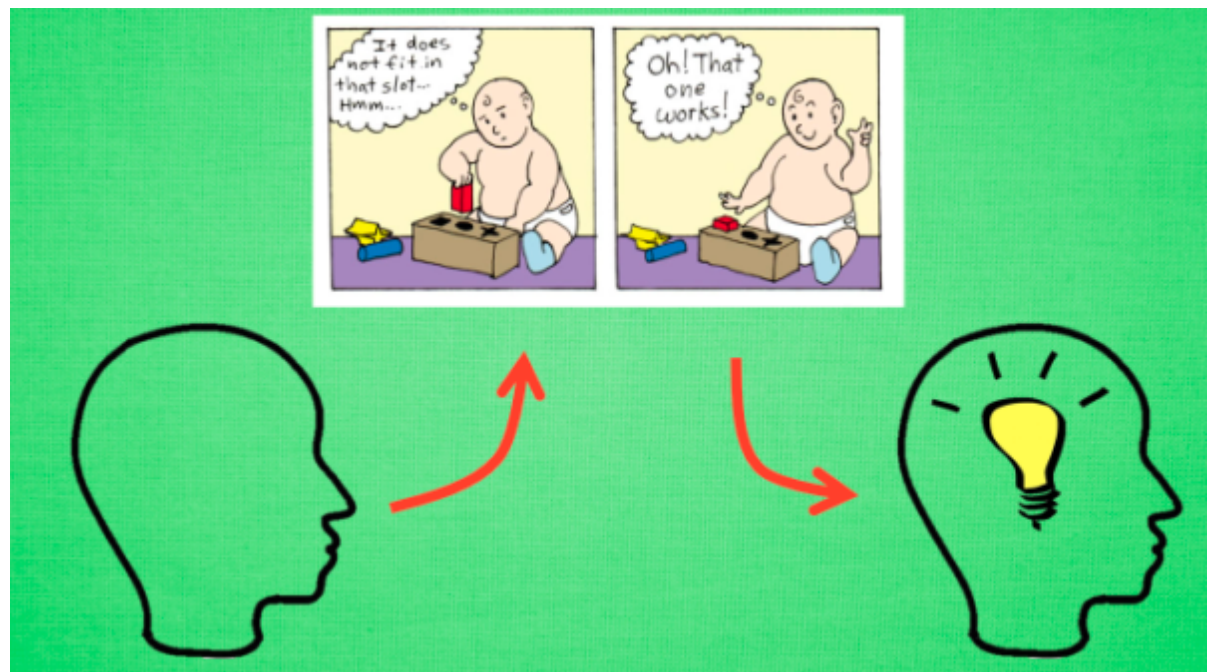
Background Knowledge

- Query optimization
- Reinforcement Learning

Query optimization

- Existing DBMSs still choose poor plans for some queries. [8]
- Cardinality estimation is based on some assumptions. [5, 8]
(uniformity, Independence)

Reinforcement Learning

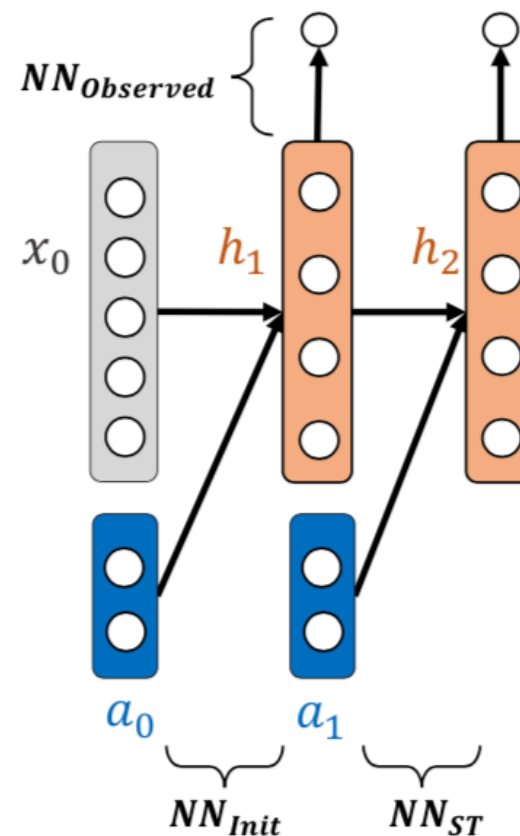
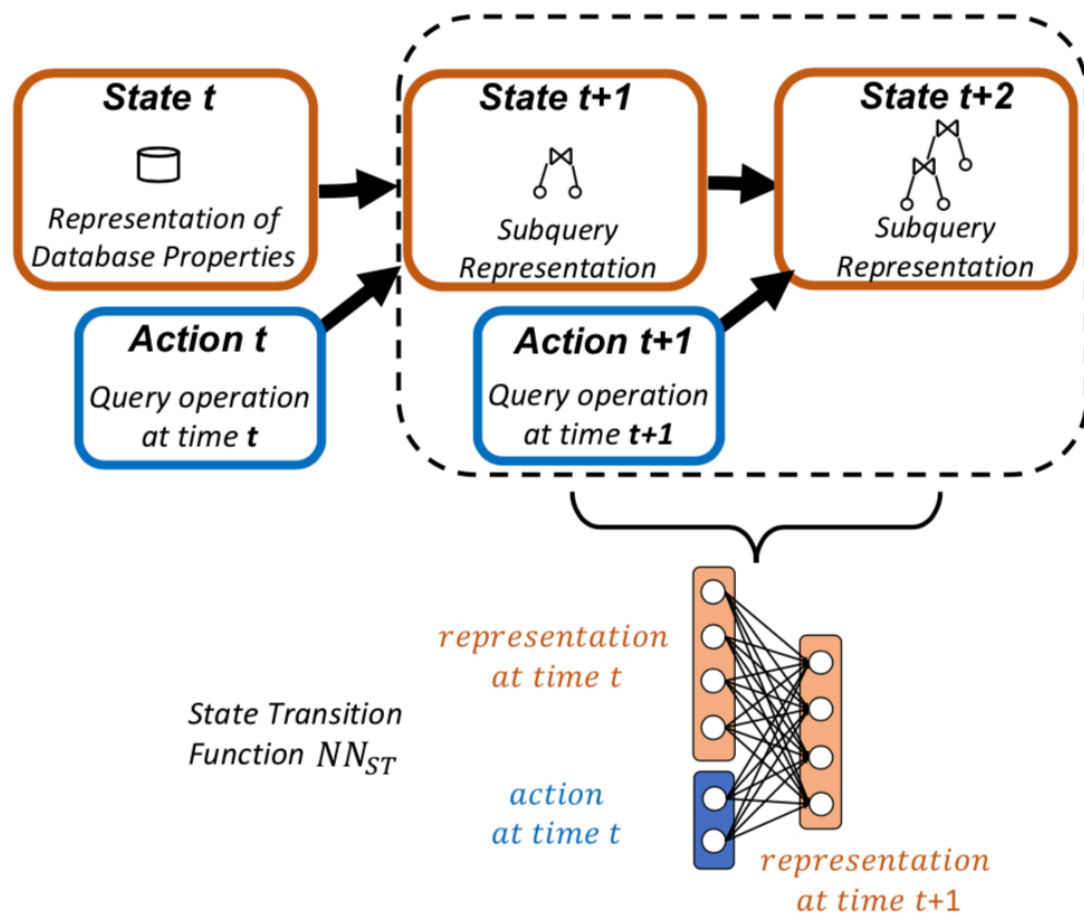


How to represent the queries and data in RL?

Contribution

- Learning a query representation
- Query plan enumeration with reinforcement learning

Learning a query representation



Query plan enumeration with reinforcement learning

- State : Query representation
- Action : Selecting an operation in query (selection/join)
- Reward : Negative of cardinality estimation
- Policy : Q-learning

Open problems

- Choice of reward functions
- The state-space is large even when we only consider selections and join.

期末分組報告日常



「靠！提問的同學是本科系戰神阿！」
「你不是說我唸PPT旁白就好嗎！？」

Q & A

專題報告



↑
教授

↑
我

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掛名組員