NRI: FND: Knowledge-based Robot Sequential Decision Making under Uncertainty

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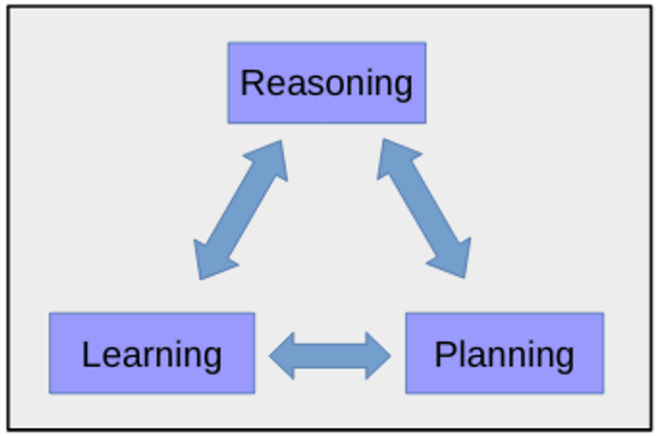
Challenge

- Robot decision-making is challenging: imperfect perception, incomplete domain knowledge, non-deterministic action outcomes, and limited interaction experience...

Solution

- A robot sequential decision-making framework that simultaneously supports learning to perceive the environment, reasoning about declarative contextual knowledge, and planning to actively collect information for task completion



Robot sequential decision-making

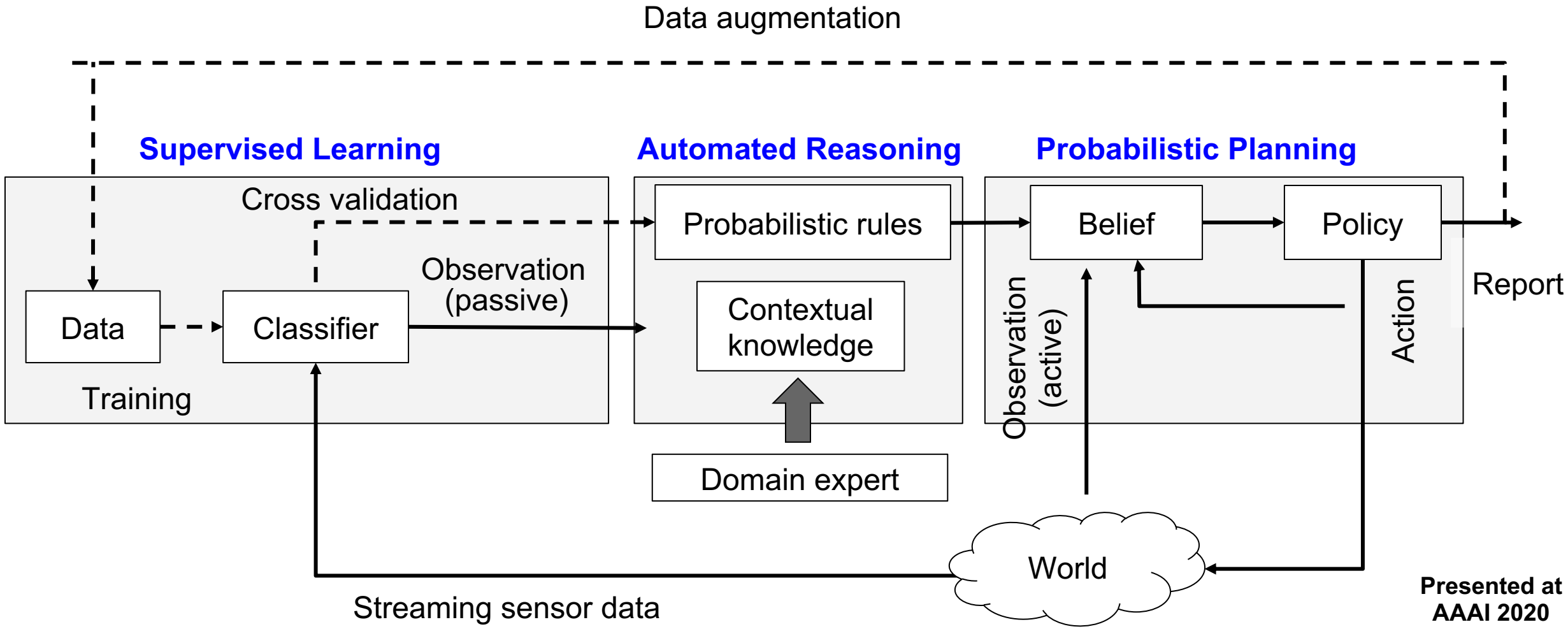
Scientific Impact

- Bring in computational methods of different modalities toward a generally applicable, **robot decision-making framework** that can significantly promote the development of intelligent agents

Broader Impact

- Example application domains include robotics, finance, urban planning, healthcare, games, transportation, e-commerce…
- K-16 education, University Undergraduate Research programs, etc

Learning, Commonsense Reasoning, and Probabilistic Planning (LCORPP), A Robot Sequential Decision-Making Framework



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