

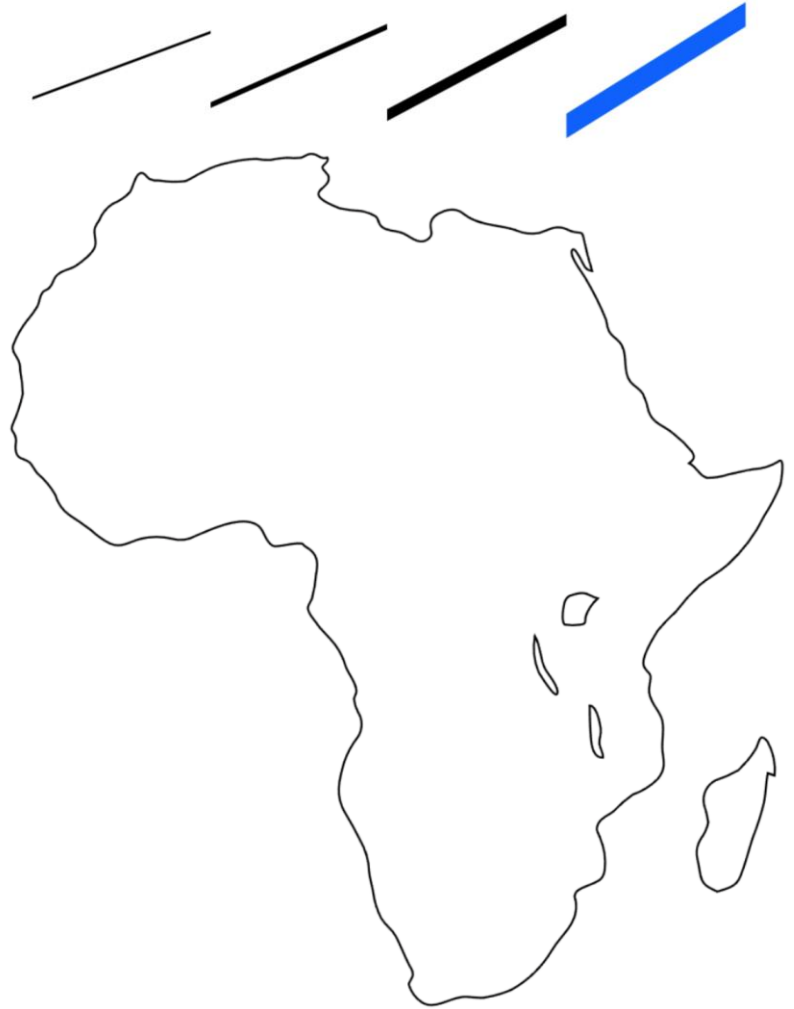
Inventing What's Beyond Research



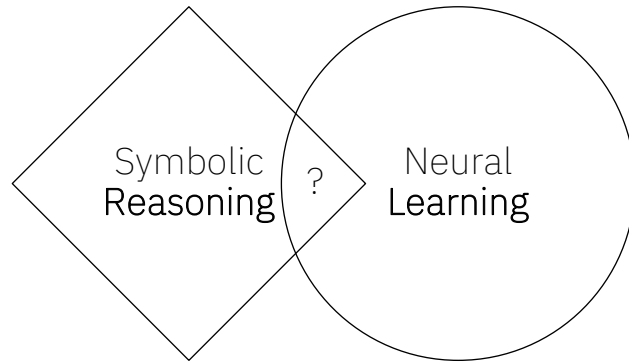
Naweed Khan

Research Scientist: NSAI

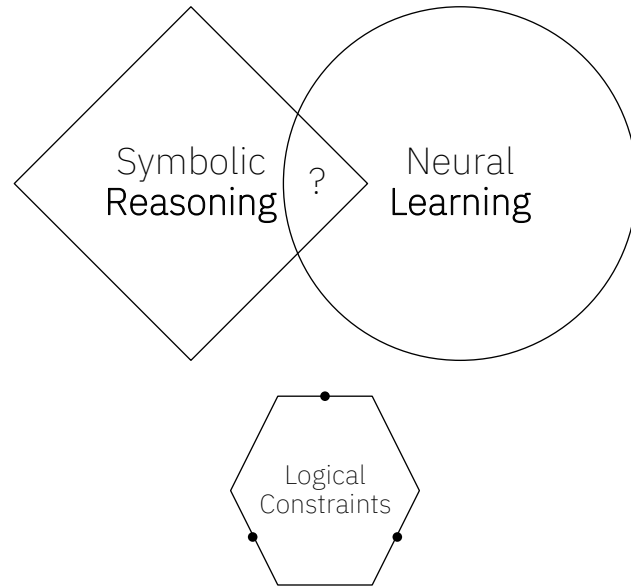
LNN Lead Developer



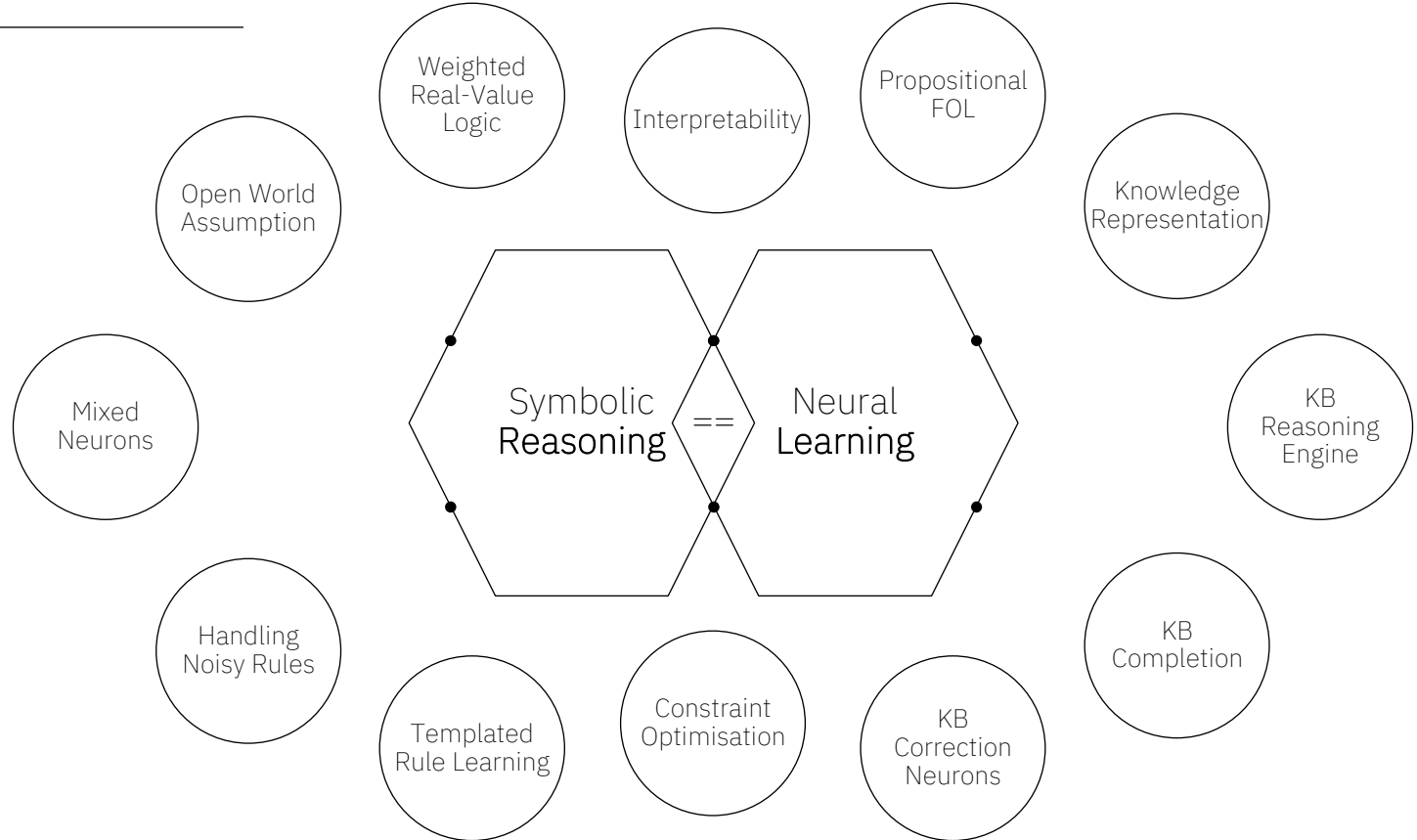
How do you fit a square
peg into a round hole?



How do you fit a square peg into a round hole?



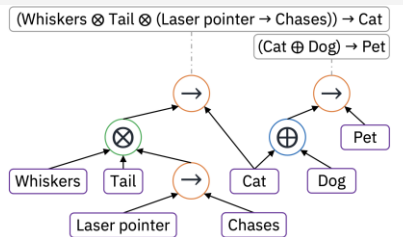
What do LNNs currently look like?



What's Next in LNN Research

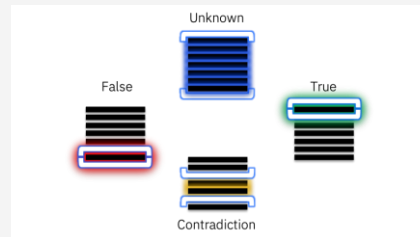
Logical Neural Networks

Logical Neural Networks
arXiv



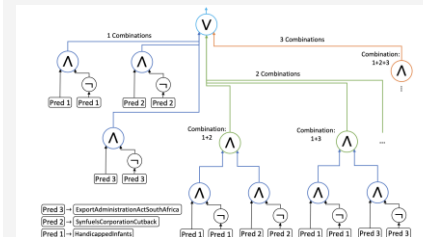
Bounded Uncertainties

Foundations of Reasoning with
Uncertainty via Real-valued Logics
arXiv



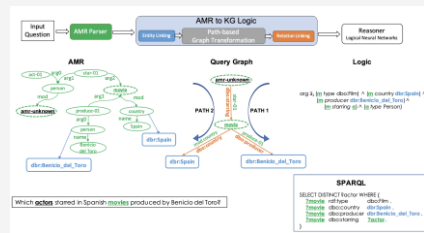
Training LNNs

Training Logical Neural Networks by
Primal-Dual Methods for Neuro-Symbolic
Reasoning
ICASSP '21



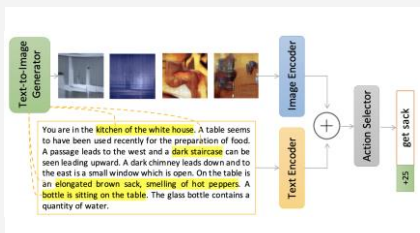
KB QA Reasoning

Leveraging Abstract Meaning
Representation for Knowledge Base
Question Answering
ACL '21



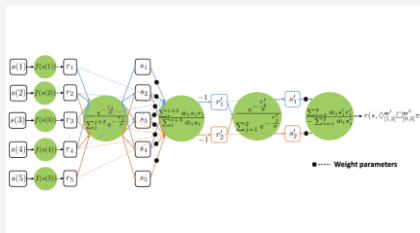
RL Optimal Action

Eye of the Beholder: Improved Relation
Generalization for Text-based
Reinforcement Learning Agents
arXiv



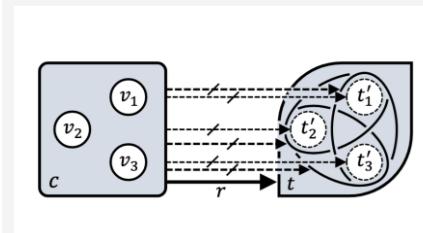
Time Series Classification

Neural Network for Weighted Signal
Temporal Logic
arXiv



KB Completion

Logic Embeddings for Complex Query
Answering
arXiv



Inventing What's Beyond Research

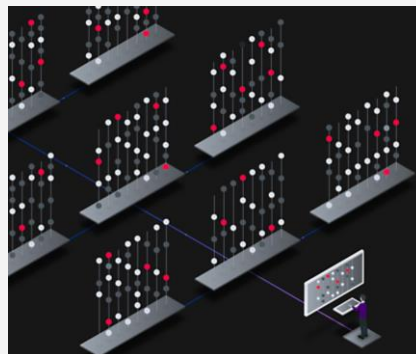
Open development on LNN
framework



Scalable computing for large
propositional KBs



Lifting reasoning beyond
grounded FOL



Interpreting and explaining
machine reason

