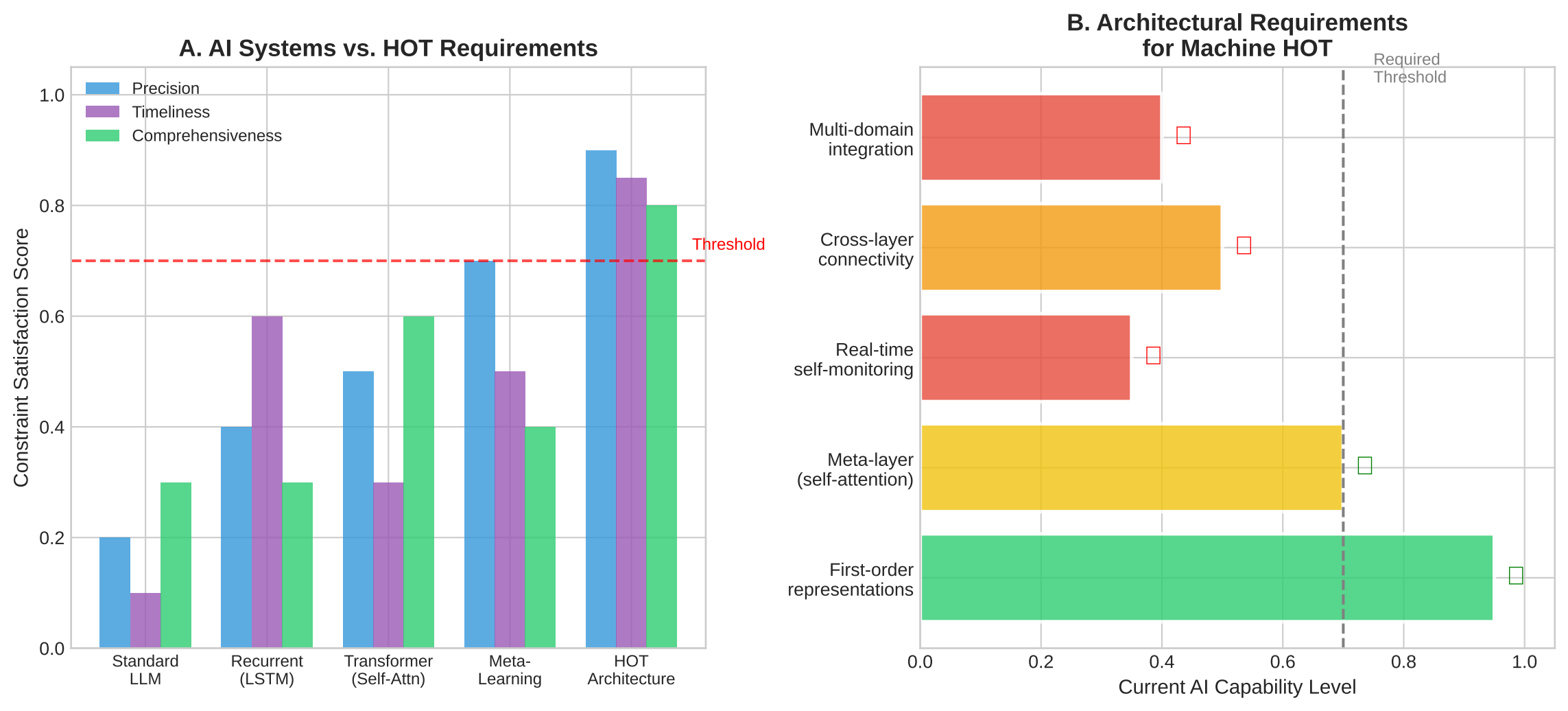
A. AI Systems vs. HOT Requirements
Precision
Timeliness
Comprehensiveness
Constraint Satisfaction Score
1.0
0.8
0.6
0.4
0.2
0.0
Threshold
Standard LLM
Recurrent (LSTM)
Transformer (Self-Attn)
Meta-Learning
HOT Architecture
B. Architectural Requirements for Machine HOT
Required Threshold
Multi-domain integration
Cross-layer connectivity
Real-time self-monitoring
Meta-layer (self-attention)
First-order representations
0.0
0.2
0.4
0.6
0.8
1.0
Current AI Capability Level