

# COLLOBORATIVE DISCUSSION 1

Summary Post

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My initial post focused on how knowledge representation (KR) has evolved. It has been quite a journey, starting with something called Porphyry's Tree in the 3rd century AD (Sowa, 2000), then moving through various diagrammatic tools used in the Middle Ages (Smith, 2003), and finally arriving at the complex, AI-powered systems we use today (Brachman & Levesque, 2004). I also pointed out that KR and reasoning are two sides of the same coin. Reasoning takes the organised information provided by KR into an innovative, active system that can develop new ideas and understandings (Russell & Norvig, 2021).

My peer Mohamed Khaled Eissa Almail Alzaabi replied to the same post with a like-minded opinion. He found the historical background helpful and agreed that knowledge representation (KR) with no reasoning ability would become a mere systematically organised bucket of facts. He also emphasised why reasoning is crucial in AI and machine learning, pointing out that KR enables machines to manage information, think logically, and make decisions (Nilsson, 2010).

I was intrigued by how knowledge representation (KR) drives the advancement of AI and machine learning. It finally dawned on me that KR is not just about storing data but about enabling intelligent systems to learn, adjust, and even think critically in real time (Lenat & Guha, 1990).

It was very insightful to learn how KR leads AI and ML forward. KR is also about keeping data and helping intelligent systems learn, change, and even think on the fly.

The discussion gave me a better idea of how KR's role in AI changes over time. It is clear that while older ways of doing KR laid the foundation for organising knowledge, the newer KR approaches have to keep changing to keep up with how complicated AI systems are becoming. Talking about this made it obvious how important it is to learn from each other, and it pushed me to rethink some things and see the stronger link between KR and reasoning in AI.

## References

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