

# Disciple Cognitive Agents: Learning, Problem Solving Assistance, and Tutoring

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## Abstract

Over the years we have researched a computational theory and technology that allows regular computer users who are not knowledge engineers to develop intelligent agents that incorporate their problem solving expertise [1-7]. This resulted in a series of increasingly more powerful Disciple cognitive agents that integrate several complementary capabilities. They are able to learn, directly from their users, their subject matter expertise, which currently takes years to establish, is lost when experts separate from service, and is costly to replace. They can assist their users in solving complex problems in uncertain and dynamic environments, and they can tutor students in expert problem solving. Disciple agents have been developed for a wide variety of domains, including manufacturing [1], education [2], course of action critiquing [3], center of gravity determination [4, 5], and intelligence analysis [6]. The most recent Disciple agents incorporate a significant amount of generic knowledge from the Science of Evidence, allowing them to teach and help their users in discovering and evaluating evidence and hypotheses, through the development of Wigmorean probabilistic inference networks that link evidence to hypotheses in argumentation structures that establish the relevance, believability and inferential force of evidence [7].

## References

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