

Unleashing Potential: Harnessing the Power of Generative AI in Intelligent Tutoring Systems

Summary. Intelligent Tutoring Systems (ITS) fueled by Generative AI (genAI) provide an exceptional opportunity to revolutionize education. Offering personalized learning experiences, tailored to individual needs and preferences, is not an easy task, yet it becomes easier by the year. In this keynote, we explore how genAI-powered ITS can transcend the limitations of traditional education models, paving the way for a new era of cognitive empowerment and skill development.

Through advanced algorithms and adaptive learning techniques, genAI-powered ITS can deliver targeted instruction, personalized practice problems, and immersive simulations that foster critical thinking and problem-solving skills. By leveraging the unique capabilities of generative AI, educators can further boost the human cognitive potential, moving beyond rote memorization to cultivate deep understanding and mastery.

However, alongside the promise of genAI-powered ITS come inherent challenges that must be addressed. Biases embedded within AI algorithms and concerns regarding data privacy and security demand careful consideration. Yet, by proactively addressing these challenges and fostering collaboration between AI developers, educators, and policymakers, we can ensure the responsible and ethical application of genAI in education.

The importance of collaboration and partnership between AI and human educators is a topic worthy of investigation. By combining the expertise of AI algorithms with the guidance and mentorship of teachers, we can create a symbiotic relationship that enhances the learning experience and maximizes student outcomes. Together, we can envision a future where genAI-powered ITS play a central role in democratizing education, empowering learners of all backgrounds to reach their full potential and contribute meaningfully to society.