Special Track on
Intelligent Tutoring Systems

Intelligent tutoring systems emerge from a multidisciplinary field of study that draws upon artificial intelligence, computer science, and cognitive science to create instructional technologies that offer immediate feedback and individualized instruction. Broadly construed, most intelligent tutoring systems can be characterized as having two loops: an outer loop and an inner loop. The outer loop intelligently selects the next relevant task for the student to complete. The inner loop iterates over individual problem-solving steps and provides contextually relevant feedback and instructional guidance. The ultimate goal of an intelligent tutoring system is to promote deep learning that persists over time, transfers to new domains, and accelerates future learning.

In general, the goal of the track is to bring together an international group of scientists to present current research, design, and empirical evaluations of their tutoring systems. This track is meant to inform researchers on the recent developments in both the design and evaluation of tutoring systems. These projects and experimental studies identify, investigate, and (begin to) resolve issues that relate to intelligent tutoring systems. Topics include game-based, narrative-based and virtual learning environments; natural language processing and dialogue in tutoring systems; modeling and shaping affective states; metacognition; gaming the system; ill-defined domains; educational data mining; authoring tools for non-experts; adaptive educational hypermedia; collaborative and group learning; open learner modeling; ontology engineering for educational purposes; novel interfaces; human computer interaction in educational settings; design decisions to increase engagement; and assistive technologies for learners with special needs.