USC Institute for Creative Technologies

ARL

Ada and Grace

Virtual Human Museum Guides

2009-present

Bringing Science and Technology to Life

Ada and Grace, ICT's virtual human museum guides, debuted at the Boston Museum of Science in 2009 and have interacted with close to 200,000 visitors there. Designed to advance the public's awareness of, and engagement in, computer science and emerging learning technologies, the virtual guides make a museum visit richer by answering visitor questions, suggesting exhibits and explaining the technology that makes them work.

Named for Ada Lovelace and Grace Hopper, two female computer science pioneers, these digital docents are among the first and most advanced virtual humans ever created to speak face-to-face with museum visitors. As both examples and explainers of technical scientific concepts, they represent a new and potentially transformative medium for engaging the public in science.

A collaboration between ICT and the Boston Museum of Science, Boston, this NSF-funded project highlights the educational and research potential of virtual characters by getting them out of the lab and interacting with people in meaningful and memorable ways. At the museum, they don't just serve as guides but as a technology exhibit too. Displays placed next to the characters further educate visitors by showing the underlying processing the virtual humans perform in areas such as automatic speech recognition and natural language processing that allow the 19-year-old twins to move, listen, and talk just like real young adults.

Musem visitors not only observe science, they also participate in the process of science: data acquired from visitor interactions with the virtual humans is being used on an ongoing basis to improve the performance and knowledge of the virtual humans. This rich database can have benefits for other virtual human applications in areas such as training, education, medical interventions, and entertainment. In addition, by moving a research project into a museum, the Virtual Museum Guides project transforms museums from a place where science is merely displayed to a place where science is actually done.

Related project: Coach Mike

At the University of Southern California Institute for Creative Technologies leaders in artificial intelligence, graphics, virtual reality and narrative advance low-cost immersive techniques and technologies to solve problems facing service members, students and society.