University of Utah
UNDERGRADUATE RESEARCH JOURNAL

VOICE ACTIVATED DIGITAL ASSISTANT: AN APPLICATION FOR TEACHER PROFESSIONAL DEVELOPMENT AND TECHNOLOGY INTEGRATION

Julia Larkin (Negar Fazeli, Eric Poitras)
Department of Education

Abstract:
As the job of a teacher is demanding, digital classroom assistants help off-load duties. Funding the amount of necessary assistants can become a financially daunting task. Voice-activated digital assistants are becoming increasingly more prevalent in the classroom, allowing teachers and students to interact and receive information. In doing so, students may interact with an agent that serves as either a teacher or a peer. The objectives of this study were two-fold: (1) develop a semi-automated workflow to author conversational trialogues leveraging metadata embedded in open educational resources and, (2) create a prototype version of the agent for usability testing. The semi-automated workflow combines the use of unsupervised and supervised machine learning algorithms to analyze unstructured text crawled from the web. In particular, the approach is applied to analyze metadata defined through standardized schemas for the semantic web. As an example, we compare and contrast several modes of dialogue, showing how an agent can teach a subject matter (i.e., learning by transmission), but also may be taught a topic by a student (i.e., learning by teaching). We discuss the implications of the authoring framework for designing conversational agents as instructional aids for teachers in the classroom in an automated manner.