DEMONSTRATION SESSION

Looking Glass

Caitlin Kelleher, *Washington University in St. Louis*

Contact: ckelleher@cse.wustl.edu

Looking Glass is the successor to Storytelling Alice designed for middle and high school students. By dragging and dropping, users can construct programs that direct the behavior of characters in a 3D scene. The system consists of a downloadable application and an online community.

Looking Glass is intended to support creative, open-ended programming. To help spark ideas, the Looking Glass community hosts a set of community-created templates and remixes, animations that can be imported into any new world. These templates and remixes can help to inspire a story line. In more formal settings, templates and remixes allow an instructor to provide shared resources for an assignment and for students to collaborate with each other.

Exploring the behavior of existing code examples can be a powerful way to learn new skills. In addition to providing story inspiration, community remixes serve as code examples that students can explore. To support users in learning new skills based on code shared through remixes, Looking Glass includes a play and explore mode in which the environment records an execution history and changes to the 3D scene as a program runs. Users can scroll back in time, see which actions were executing, and replay individual statements.

A free download is available at lookingglass.wustl.edu for Windows, Mac, and Linux.

Acknowledgements: This material is based upon work supported by the National Science Foundation under Grant Nos. 1440996 and 1054587. Any opinions, findings, and conclusions or recommendations expressed in this material are those of the author(s) and do not necessarily reflect the views of the National Science Foundation.

ACM Categories & Descriptors: D.2.6 Programming Environments – Graphical Environments

Keywords: block-based programming; K-12; interactive program visualization; online community

DOI: <http://dx.doi.org/10.1145/2676723.2691873>

EngageCSEdu: CS1 and CS2 Materials for Engaging and Retaining Undergraduate CS Students

Alvaro Monge, *California State University Long Beach*

Beth A. Quinn, *National Center for Women &*

Information Technology

Cameron L. Fadjo, *Google Inc.*

Contact: alvaro.monge@csulb.edu

How do you engage students in the computer science classroom? In this Demo Session we will examine this question within the context of EngageCSEdu (<http://www.engage-csedu.org>), a web-based collection of instructional materials for introductory CS classes. Developed by computer scientists, social scientists, and learning scientists from California State University, Long Beach, Carnegie Mellon University, University of Pittsburgh, the National Center for Women & Information Technology (NCWIT), and Google, EngageCSEdu is comprised of ~1500 instructional materials (such as assignments, projects, labs, and assessments) and 17 Engagement Practices (strategies and techniques for engaging and retaining students based on CS education and social science research). During this session we will demonstrate key features of EngageCSEdu, discuss how research-based findings on gender diversity and student engagement were used in its development, and invite participants to contribute their ideas for engaging and retaining students. Attendees will explore EngageCSEdu with members of the original development team and discuss how this focused and comprehensive open collection of instructional materials can be effectively used to support instructors. As a product by and for the CS education community, this demo is an opportunity for potential users to provide valuable feedback and input into the on-going development and dissemination of materials on EngageCSEdu. By the end of this demonstration participants will be more familiar with the research-based factors shown to increase engagement among undergraduate students, particularly women and underrepresented minorities, and have an opportunity to play an active role in positioning EngageCSEdu within the CS education community.

ACM Categories & Descriptors: K.3.2 [Computer and Information Science Education]: Computer Science education

Keywords: Student Engagement; Student Retention; Curriculum Issues; Pedagogy; Instruction; CS1; CS2; Gender Diversity; Engagement Practice

DOI: <http://dx.doi.org/10.1145/2676723.2691875>

Permission to make digital or hard copies of part or all of this work for personal or classroom use is granted without fee provided that copies are not made or distributed for profit or commercial advantage, and that copies bear this notice and the full citation on the first page. Copyrights for third-party components of this work must be honored. For all other uses, contact the owner/author(s). Copyright is held by the author/owner(s).

SIGCSE '15, March 4–7, 2015, Kansas City, MO, USA.

ACM 978-1-4503-2966-8/15/03.