A system for sending the right hint at the right time

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ABSTRACT

Hints are sometimes used in online learning system to help students when they are having difficulties. However, in all of the systems we are aware of, the hints are fixed ahead of time and do not depend on the unsuccessful attempts the student has already made. This severely limits the effectiveness of the hints.

We have developed an alternative system for giving hints to students. The main difference is that the system allows an instructor to send a hint to a student *after* the student the student has made several attempts to solve the problem and failed. After analyzing the student's mistakes, the instructor is better able to understand the problem in the student's thinking and send them a more helpful hint.

We have deplyed this system in a probability and statistics course with 176 students. We have demonstrated the superiority of the new hints methodology over the traditional one.

The limiting factor on the effectiveness of our system is the amount of manual labor required to send each hint. This is the main obstacle we see in scaling this approach to larger classes and to MOOCs. We are currently exploring several approaches for addressing this problem: 1) Letting students send hints to their peers. 2) Creating hint libraries. 3) Using machine learning methods to automate the process of mapping student mistakes to the most relevant hint.

Author Keywords

Online Homework; Hints; Real-time intervension

ACM Classification Keywords

K.3.1 COMPUTERS AND EDUCATION: Computer Uses in Education

INTRODUCTION

Our Video: `http://youtu.be/7KNzBAlh8L0`

REFERENCES FORMAT

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