Automatic Feedback of Student Work Using Smartpens

Tech ID: 23755 / UC Case 2013-588-0

CONTACT

Venkata S. Krishnamurty

venkata.krishnamurty@ucr.edu

tel: .

PATENT STATUS

Country	Type	Number	Dated	Case
United States Of America	Issued Patent	10,269,258	04/23/2019	2013-588

FULL DESCRIPTION

Background

Instructors spend a significant amount of time on the manual and often subjective task of grading student work. While opening the door to grading inconsistencies, the administrative burden limits the instructor's ability to spend time in teaching and interacting with students. Increasing class sizes reduces the ability of educators to assess the learning of their students. A tool that can automate the assessment process, providing rapid, objective and consistent feedback to students and instructors would be extremely valuable.

Innovation

Smartpens (such as from Livescribe™) are digital pens that record the work at the time it is written. Researchers at UCR have developed a sophisticated software system that automates the evaluation of student work. The technology is capable of analyzing student-generated diagrams and free-form sketches and determine the correctness of their work without human intervention. The system interprets the information to provide an objective evaluation of the student's understanding.

OTHER INFORMATION

KEYWORDS

Education, Smartpens, Students, Learning, Online classes, automated assessment, educational technology, automated grading, corporate training, objective grading

CATEGORIZED AS

▶ **Computer**
  ▶ Other
▶ **Sensors & Instrumentation**
  ▶ Analytical
  ▶ Physical Measurement
  ▶ Position sensors
  ▶ Scientific/Research

RELATED CASES

2013-588-0

ADVANTAGES

- ▶ Real-time instructional analytics and feedback to students and educators.
- ▶ Instantaneous assessment and grading of student's homework and examinations.
- ▶ Significantly cuts down on the hours instructors spend on manual grading.
- ▶ Provides consistent and objective evaluation.
- ▶ Easily handles large class sizes.
- ▶ Can be easily adapted for a wide range of subjects.

SUGGESTED USES

- ▶ Higher education
- ▶ K-12 education
- ▶ Online learning
- ▶ Corporate training
- ▶ Professional certification

STATE OF DEVELOPMENT

Proof-of-concept has been demonstrated and a prototype system has been developed.