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Technology Based Learning System in Internet of Things (IoT) Education (Conference Paper)

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Abstract

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In this decade, Internet of Things (IoT) technologies are motivating nations for digital transformation. This transformation is part of Fourth industrial revolution (Industry 4.0). Several challenges are obstacle in the digitalization, one of them is talent in this field. There are not many available automation or control labs equipped with advance automation technologies in the educational institutions. To produce more force for IoT, engineering intuitions need to improve their curriculum and engineering lab facilities. In this paper, a technology-based learning system is proposed for learning IoT. The design of this system purposely developed for control lab for undergraduates and postgraduate students. This system offers a low-cost development using industrial standard controller, which is suitable for industrial and enterprise applications prototyping. Three modules are prepared to train the students; 1) Introduction to IoT Industry 4.0, 2) controller programming, configuration and machine to machine (M2M) communication and 3) design and development of web and mobile applications. All students implemented and tested the industrial standard IoT application in the end of Session. The design and implementation result shows the learning experience of students has been improved and motivates the institutions to apply this low-cost system to fulfil the future talent demand in this field. © 2018 IEEE.

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Topic: Internet | Authentication | smart home

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Author keywords

Automation Control Lab Engineering Education Internet of Things (IoT) Technology based learning.

Indexed keywords

Engineering controlled terms: Automation Controllers Costs Engineering education Industry 4.0 Laboratories Learning systems Software prototyping Students

Engineering uncontrolled terms: Design and Development Design and implementations Educational institutions Enterprise applications Industrial revolutions Internet of Things (IOT) Machine to machine (M2M) Technology-based learning

Engineering main heading: Internet of things

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