Special Issue on Sensors and Artificial Intelligence for Smart Education Environments: Part 1
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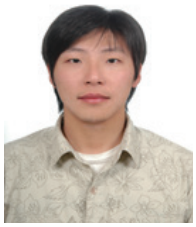
Preface



In various fields like education, the integration of sensors and artificial intelligence (AI) is increasingly prevalent. Yet, to establish a smarter educational setting, there's a pressing requirement to move away from uniform systems and embrace personalized learning environments that empower learners by incorporating a personalized and analytics-based framework. In order to explore the smart education and smart campus modes in the context of artificial intelligence Internet of Things (AIoT), an education-status-predicting module that detects learners' behaviors or learning environment contexts through links with sensing devices is needed. Therefore, we must look toward developing an AI-based efficient smart education/learning framework for an education platform. In this special issue (SI), ideas that combine AI and sensors technologies to improve the learning and campus environments will be presented. The goal of this SI is to highlight state-of-the-art works that deal with the use of AI for educational applications. It is aimed at promoting and continuing discussions on smart education/learning systems that might combine hardware/software and multiple sensors with the goal of creating more efficient and attractive learning environments. By applying AI and sensors in education, school operational efficiency, campus safety, and quality of education can be improved. For this SI, we have solicited high-quality research results in all related areas.

This SI is on “Sensors and Artificial Intelligence for Smart Education Environments-Part 1” for *Sensors and Materials*. It focuses on state-of-the-art AI technology to create the potential for the improvement of smart education/learning framework services. All the papers were submitted by researchers working in fields related to AI and bigdata. This SI contains six papers categorized into AIoT environments, graph convolutional network, backpropagation neural network, face recognition technology, responsive question-answering system, and bigdata analysis. The first three papers are related to smart education/learning applications, not only ML but also DL, that greatly affect the performance of sensors in education. The remaining three papers concern data science in online education.

Finally, I thank the authors for their considerable contributions and the reviewers for their beneficial comments. In closing, I sincerely give special thanks to the chief of the editorial department of MYU K.K., Ms. Momoko Kawamura, for her kind and proficient support in the review and publication processes.

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