

Building *Intelligent Robots*: Designing Embedded Systems at Sophomore Level within the PBL Education

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Abstract

Robot design integrates concepts and techniques borrowed from a diversity of subjects such as mechanical and electronic systems, algorithms, and programming. In addition, most students find designing robots an enjoyable motivating activity. In this paper we report our experiences in supervising sophomore undergraduate students during project development in the subject of embedded system design within the PBL education at Aalborg University Esbjerg. We have found that the PBL approach in education is especially suitable to teach embedded system design at sophomore undergraduate level. In addition, adapting the contents of some key courses may have a significant impact on the proficiency level achieved by students on embedded system design. Finally, challenging interesting problems, providing adequate motivation to students, play a foremost role at improving the final outcome of their projects.

Keywords

Embedded Systems, Robotic Systems, Problem Based Learning, Undergraduate Education, Computer Science and Engineering.