Introducing Augmented Reality in next generation Industrial Learning Tools

Keywords: Industrial Learning, Augmented Reality, Vocational Education and Training, Lifelong Learning.

Problem: In a high-tech industrial environment, skilled personnel are required to perform highly demanding maintenance and repair operations. Different learning technics supported by e-learning platforms have been developed to boost workers’ skills. The concept of Lifelong Learning was introduced several years ago. Towards this direction new technologies, like AR, can change the way learning material is introduced to skilled people. The different ways people perceive new knowledge throw learning should be further studied. As a result new methods and tools will be introduced. These suggestions are to make learning more interesting, relevant, applied and though more efficient. The research activities will be aligned with the objective of the TECMEHV project. TECMEHV project consists of instruments and actions which are necessary to promote and develop the integration of vocational education and training on maintenance and repairing of the new hybrids and electric vehicles. Besides, it aims at promoting and developing the assessment and accreditation of professional competences in order to encourage the professional and social development of the people and to meet the needs of the productive system.

Project: In this project, the student will study state-of-the-art in Augmented Reality platforms for mobile devices and their application in Industrial Learning. Experience for the EU LLP TECMEHV project will be used and collaboration with other EPFL Labs focused on learning, as well as collaboration with ATA, NORAUTO and Centro Ricerche FIAT (CRF) is envisaged.

Plan:

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<th>Fall semester</th>
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1. Study the Industrial Learning and Vocational Education and Training concepts (17.09-20.09)
2. Study state-of-the-art in Augmented Reality platforms and tools for mobile devices (23.09-27.09)
3. Compare and select the most appropriate AR platform, get familiar with using the platform (30.09-04.10)
4. Choose the appropriate TECMEHV training scenario for demonstration (07.10-11.10)
5. Perform requirements specification (14.10-18.10)
6. Develop a prototype for mobile devices in the framework of TECMEHV using the selected AR platform (21.10-22.11)
7. Test, evaluate and finalize the prototype with TECMEHV Partners (25.11-21.12)
8. Write a final report (January 2014)

External Partners: ATA, NORAUTO, Centro Ricerche FIAT (CRF)
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Duration: 4 months

Abbreviations
AR: Augmented Reality
EU: European Union
LLP: Lifelong Learning Program
TECMEHV: Training & Development of European Competences on Maintenance of Electrical and Hybrid Vehicles
VET: Vocational Education and Training