

Open Educational Resources and Competences related with Practices and Laboratories

The Special Session “Open Educational Resources and Competences related with Practices and Laboratories” is Co-Located with 13th International Conference on Remote Engineering and Virtual Instrumentation (REV2016).

Focus:

A fundamental strength of many engineering courses is engaging students to foster the connection between theories and their appropriate practical applications. The objective of this special session within the 13th International Conference on Remote Engineering and Virtual Instrumentation (REV 2016) is to provide a forum to discuss about experiences in learning and teaching Open Educational Resources (OERs) and Competences related with Practices / Laboratories. Following milestones of main conference, this special session aims to stimulate also an open discussion and a reflection of experience in the use of innovative experiments in engineering education.

As a result, this special session will focus on the two following main concepts (i) Innovative experiences using OER to demonstrate and present both scientific and educational studies using OER-based novel educational research techniques, and (ii) Novel solutions to promote development of competences using remote and / or virtual laboratories to discuss concepts of different engineering labs.

Proposal and Ideas:

Several ideas and proposals will be inside this Special session, for example:

- Connection of Open Educational Resources with Simulation and Remote Laboratories in General Electronics
The present status of repositories and the integration of the Open Educational resources in a new way of finishing and sharing are giving us a new collaboration and synergy with the use of simulation, virtual and remote laboratories
This new approach together with the new integration of immersive environments and virtual worlds, new laboratories development and new educational resources linked with them will change the view that we have for the future of these integration.
- Educational Experiences on Experimentation with Optimization Algorithms
A long tradition of experimentation exists in algorithm courses, generally focused on their time performance. It is also common in introductory courses on computer programming to experiment with correctness using a number of testing techniques. However, many of the algorithms addressed in algorithm courses exhibit a third property, namely optimality. In the same vein as the other two properties, it is important to experiment with optimality if we want students to achieve a deep understanding of this property.
In this proposal, we present our experiences integrating experimentation with optimality into assignments of algorithm courses. Early experiences were limited to

a simple class of optimization algorithms, greedy algorithms. Afterwards, we extended these experiences to more complex design techniques: backtracking, dynamic programming, and approximation algorithms. We will also report in the paper on the difficulties and misunderstandings detected in students regarding optimality, as well as on the instructional interventions we designed to alleviate these difficulties.

- eMadrid project (<http://www.emadridnet.org/>) will contribute with several publication proposal as well as reviewers to support the Special Session

Topics of interest:

The target audience will be educators and researchers that are within the scope of interest at main conference REV 2016. Aspects should show enough evidences to achieve intended learning outcomes more effectively.

The topics of paper contributions for this special session include (but are not limited to):

- Open Educational Resources (OER)
- Practical resources end Open repositories
- Practical Competences
- Remote and virtual laboratories
- Remote instrumentation and engineering
- Experimentation of software processes

Important Dates:

15 Nov 2015	Submission deadline for complete papers for the Special Session
15 Dec 2015	Notification of Acceptance
15 Jan 2016	Author registration and camera-ready due
24 Feb 2016	Conference Opening

Manuscript Submission:

Authors wishing to contribute to this special session must follow same style rules for papers sent to main conference.

Manuscripts must be submitted electronically through the main conference web site within “Special Session” being selected as “Manuscript Type” in the corresponding menu.

All submissions will be peer-reviewed by selected experts from REV 2016 program committee and the Special Session organizers that will follow same review standards and processes of main conference. Accepted contributions will be included into proceedings of the main conference.

Program Committee:

For further information about preparation of contributions for this special session, contact the

Special Session co-chairs.

- Oscar Martinez-Bonastre <oscar.martinez@umh.es>
- Edmundo Tovar <etovar@fi.upm.es>
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Publications

All accepted papers will appear in the REV2016 proceedings, published by IEEE and listed in IEEE Xplorer.