
Last Call for Extended Abstracts

ThEdu'13
TP components for educational software
(http://www.uc.pt/en/congressos/thedu)

Co-located with CICM 2013
Conferences on Intelligent Computer Mathematics
8.-12. July 2013
Bath, UK
http://www.cicm-conference.org/2013/cicm.php

ThEdu'13 Scope

ThEdu is a forum to gather the research communities for computer Theorem Proving (TP), Automated Theorem Proving (ATP), Interactive Theorem Proving (ITP) as well as for Computer Algebra Systems (CAS) and Dynamic Geometry Systems (DGS).
The goal of this union is to combine and focus systems of these areas and to enhance existing educational software as well as studying the design of the next generation of mechanised mathematics assistants.

Important Dates:
---

* Extended Abstracts: 07 Jun 2013 (extended deadline)
* Author Notification: 20 Jun 2013
* Final Version: 05 Jul 2013
* Workshop Day: 10 July
* Postproceedings(EPTCS): 15 October 2013

(https://www.easychair.org/conferences/?conf=thedu13)

Elements for next-generation assistants include:

* Declarative Languages for Problem Solution: education in applied sciences and in engineering is mainly concerned with problems, which are understood as operations on elementary objects to be transformed to an object representing a problem solution. Preconditions and postconditions of these operations can be used to describe the possible steps in the problem space; thus, ATP-systems can be used to check if an operation sequence given by the user does actually present a problem solution. Such "Problem Solution Languages" encompass declarative proof languages like Isabelle/Isar or Coq's

Mathematical Proof Language, but also more specialized forms such as, for example, geometric problem solution languages that express a proof argument in Euclidean Geometry or languages for graph theory.

* Consistent Mathematical Content Representation: libraries of existing ITP-Systems, in particular those following the LCF-prover paradigm, usually provide logically coherent and human readable knowledge. In the leading provers, mathematical knowledge is covered to an extent beyond most courses in applied sciences. However, the potential of this mechanised knowledge for education is clearly not yet recognised adequately: renewed pedagogy calls for enquiry-based learning from concrete to abstract --- and the knowledge's logical coherence supports such learning: for instance, the formula 2.Pi depends on the definition of reals and of multiplication; close to these definitions are the laws like commutativity etc. Clearly, the complexity of the knowledge's traceable interrelations poses a challenge to usability design.

* User-Guidance in Stepwise Problem Solving: Such guidance is indispensable for independent learning, but costly to implement so far, because so many special cases need to be coded by hand. However, CTP technology makes automated generation of user-guidance reachable: declarative languages as mentioned above, novel programming languages combining computation and deduction, methods for automated construction with ruler and compass from specifications, etc --- all these methods 'know how to solve a problem'; so, using the methods' knowledge to generate user-guidance mechanically is an appealing challenge for ATP and ITP, and probably for compiler construction!

In principle, mathematical software can be conceived as models of mathematics: The challenge addressed by this workshop is to provide appealing models for mathematics assistants which are interactive and which explain themselves such that interested students can independently learn by inquiry and experimentation.

Submission

We welcome submission of extended abstracts (4 pages max) presenting original unpublished work which is not been submitted for publication elsewhere.

All accepted extended abstracts will be presented at the workshop, and the extended abstracts will be made available online. A publication post-proceedings (papers, 16 pages max) under EPTCS is under consideration.

Extended abstracts and demo proposals should be submitted via ThEdu'13 easychair (https://www.easychair.org/conferences/?conf=thedu13).

Extended abstracts should be no more than 4 pages in length and are to be submitted in PDF format. They must conform to the EPTCS style guidelines (http://http://style.eptcs.org/).

At least one author of each accepted extended abstract/demo is expected to attend ThEdu'13 and presents her or his extended abstract/demo.

Program Committee

Ralph-Johan Back, Abo Akademy University, Finland
Francisco Botana, University of Vigo at Pontevedra, Spain
Roman Haek, University of South Bohemia
Predrag Janicic, University of Belgrade, Serbia
Julien Narboux, University of Strasbourg, France
Filip Maric, University of Belgrade, Serbia
Walther Neuper, Graz University of Technology, Austria
Pavel Pech, University of South Bohemia
Vanda Santos, CISUC, Portugal
Wolfgang Schreiner, University of Linz, Austria
Dusan Vallo, University of Nitra, Slovakia
Makarius Wenzel, University Paris-Sud, France
Burkhart Wolff, University Paris-Sud, France