



Report on the

2nd CADdemo@CARS Workshop

Saturday, 26 June 2010, 14:00-17:00

CARS, Geneva, CH, Room I

- On the final afternoon of the 24th Computer Assisted Radiology and Surgery Congress and Exhibition (CARS 2010) held in Geneva, CH, over 50 highly interested and motivated participants joined the 3-hour computer-aided detection (CADe) and diagnosis (CADx) demonstration workshop (“CADdemo@CARS”), organized by the EFMI Working Group Medical Image Processing (WG MIP).
- The goal of this workshop was to provide once again the opportunity for CAD researchers to get in contact, to exchange experiences and to create and gather new ideas, as well as to provide an open platform for intense individual communication between the developers, researchers, providers, and users of CAD systems.
- The 2010 CADdemo@CARS workshop consisted of 9 live demonstrations of various CAD systems, ranging from research demonstrators via evaluation software to prototypes for commercial products.
- After a brief welcome note and introduction to the aims of the workshop by the session chairs Thomas Wittenberg and Hiroyuki Yoshida, each team presented its CAD demo system in a short one-minute-one-slide presentation. Throughout the workshop, the presented slides were continuously projected in a non-stop loop.
- After the introductory presentations, the participants of the workshop used the opportunity to get hands-on live demonstrations of the various CAD systems which inevitably led to detailed and leading-edge discussions between the presenters and the participants.
- The presented CAD demonstrations included and covered a wide range of applications for various diagnostic and structural problems, such as:
 - computer-assisted detection (CADe) of lung nodules, cerebral aneurysms, and maxillary sinusitis;
 - computer-assisted diagnosis (CADx) and analysis and of mammographic lesions, interstitial lung diseases, and of low- and high-grade lesions on the *portio vaginalis uteri*;
 - bone age assessment;
 - fracture radiography case retrieval; and
 - evaluation of segmentation algorithms.
- The methods presented were based on a wide range of 2D and 3D medical imaging modalities including digital mammography, bone X-ray, hand radiographs, dental panorama radiography, high resolution lung CT (HRCT), CT angiography, as well as colposcopy.
- The CADdemo@CARS workshop was closed by concluding remarks given by the session chairs Hiroyuki Yoshida and Thomas Wittenberg, pointing out that
 - the abstracts describing the presented CAD systems are planned to be published in an extended version in a special CAD edition of the CARS journal, edited by the organizers of the CADdemo@CARS workshop;



- a feedback questionnaire shall be sent to the presenters as soon as possible for a post-workshop evaluation;
 - the next CADdemo@CARS workshop is planned to be organized during the 25th Computer Assisted Radiology and Surgery Congress and Exhibition (CARS 2011), to be held in Berlin, Germany;
 - a possible incentive (e.g. a best demo-award) shall be organized and provided by the organizers to motivate the participants in the next CADdemo@ CARS workshop; and
 - coherence of the CADdemo@CARS workshop shall be established with the 13th International Workshop on Computer-Aided Diagnosis, being a regular part of CARS.
- The feedback given from both the presenters and the visitors was, like last year, very positive. Especially the intense individual discussions of the live demos and the new contacts which could be established were appreciated by all presenters and participants.
 - Several ideas for improvement have been gathered and discussed throughout the workshop, in order to increase the future attractiveness, including:
 - to schedule the next workshop in the late afternoon after the CAD track of the conference (13th International Workshop on Computer-Aided Diagnosis), in order to create thematical and temporal (and possible spatial) coherence between these two separately organized events;
 - probably fuse the email lists and distributors of the CADdemo@CARS workshop and the Workshop on Computer-Aided Diagnosis to reach more possible participants;
 - to ideally involve more companies as presenters, aiming at a total of around 15 demonstrations next year;
 - to ask presenters and applicants of regular CAD papers and posters to also make a live-demonstration of their system at the CADdemo@CARS workshop as an increased value of their work;
 - to establish a specific incentive (such as e.g. a best demo award) to the participants of the next workshop, which could easily be organized and provided by the organizers in the form of a certificate;
 - organize a questionnaire to be provided to the presenters and participants, to acquire feedback about the workshop;
 - invite users, i.e. medical doctors, to visit the demonstrations and meet researchers and companies (the question is, how).

Prof. Dr. Alexander Horsch, WG Chair
Technische Universität München
alexander.horsch@imse.med.tu-muenchen.de

Prof. Dr. Hiroyuki Yoshida
Mass General Hospital / Harvard Medical School
yoshida.hiro@mgh.harvard.edu

Dr. Matthias Elter, Fraunhofer IIS Erlangen
matthias.elter@iis.fraunhofer.de

Dr. Thomas Wittenberg, Fraunhofer IIS Erlangen
thomas.wittenberg@iis.fraunhofer.de

