Third edition ICT with Industry 2015

Introduction

Since 2013, NWO and STW are collaborating with the research schools ASCI, IPA and SIKS in the organisation of the ICT with Industry workshop. The main aim of the workshop is to stimulate contacts and future collaborations between researchers and professionals from industry and public organisations. At the 2015-edition the steering committee received overall very positive feedback from the participants. The most common remarks were, first of all, that the participants gained a broader view, and learned about new fields and the techniques that they use, which may possibly also be useful in their research work or within their organisations. Second, participants enjoyed meeting new people in a creative setting, yielding useful professional contacts for future collaborations. The workshop also allowed them to showcase their knowledge and skills, and thus gain more visibility. Third, participants appreciated gaining a better understanding of industry needs, and how their research may be useful for practical applications. The format of the workshop also gave people the opportunity to work on problems that they otherwise would not have the time for. Finally, several participants appreciated the additional guidance from the steering committee in solving their specific cases.

Experience of the existing workshops, such as Physics with Industry, Life Sciences with Industry, Mathematics with Industry and the previous editions of ICT with Industry, was used as points of considerations for this edition. The Workshop ICT with Industry 2015 took place at the Lorentz Center in Leiden from 7 to 11 November 2015.

Problems & Outcome

The industrial partners presented their case study and objectives on the first day. Immediately afterwards, groups of participants began to brainstorm, to program and to look for possible solutions. Each team was guided by an academic team leader and the case owners. The case studies of 2015 were as follows:

1. Alten PTS and Deltares: Towards computational early warning systems for cyanobacteria blooms in fresh-water swimming waters and drinking water reservoirs
    The challenge was to construct an initial predictive, computational model of toxic scum formation of the fresh water cyanobacterium Microcystis aeruginosa, prepare it for the assimilation of satellite data and for integration into existing predictive models for surface water quality. During the workshop the team formulated research questions based on the existing information. Unfortunately the case owners could not attend the entire workshop, which was not very much stimulating for the team members. The team delivered a workshop report for Deltares and Alten PTS.
2. Vicarvision and Noldus Information Technology: Tiny Motion Detection
    During the workshop, the team worked on the following challenges:
    -   Validation of the technology in scientific articles.
    -   Extend the technology to include camera motion compensation, and validation of results.
    -   Extend the technology to process crowds rather than a single subject.
    -   If time permits: based on measured data: develop models, scientific analysis to interpret human
    The team was very dedicated to their case study and showed at the end of the workshop the possible solutions. At the moment the researchers are preparing a project proposal to be submitted for funding. The team delivered a workshop report for Vicarvision and Noldus Information Technology.
3. IND and Belastingdienst: Towards a Method for a Formal Analysis of Law
    Service providing organizations, either private or public, are increasingly working within a cross organizational setting. As a result they are confronted with more and more rules. These rules include external rules, coming from partner organizations. Much work has been done in recent years on agile ways of defining rules in IT-systems ('Rule-based or knowledge-based working', 'rule management', 'Knowledge as a Service' (KaaS)). However, no method exists as yet for guaranteed compliancy to the sources of law and other norm

frameworks these rules are based on. During the week the team worked on identifying research questions and formulating possible recommendations. At the end of the week there were concrete plans for follow ups, among other internal workshop within IND and Belastingdienst, writing scientific publication and preparing a Lorentz workshop proposal. The team delivered a workshop report for IND and Belastingdienst.

4. Greenclouds: Towards a MicroServices Architecture for Clouds
   The case focused on the main research questions as follows:
   - How portable are applications to microservices? How well do state of the art methods lend themselves to this problem?
   - How can the performance of microservices be evaluated? Are standardized benchmark suites reusable in this context? How can the performance evaluation methodology be extended to include business impact metrics?

   During the workshop the team came up with solutions and recommendations. At the moment the team is looking for funding possibilities for research projects. A possible spin-off may derive from this workshop. The team delivered a workshop report for Greenclouds.

In short, the workshop resulted in new collaborations and research ideas, which all have the potential to be further developed into research proposals. Funding possibilities were offered by NWO and STW.

Visibility

The workshop results were communicated through the following channels:
- NWO EW newsletter: http://www.nwo.nl/actueel/nieuws/2015/ew/onder-druk-presteren.html
- NWO website: http://www.nwo.nl/over-nwo/organisatie/nwo-onderdelen/ew/bijeenkomsten/ict+with+industry+workshop/case+studies

On 22 March 2016 there will be a session dedicated to ICT with Industry 2015 at the ICT.OPEN2016, which is the main ICT research conference in the Netherlands. www.ictopen.nl

Governance

The steering committee consisted of:
- Dr. Ana Lucia Varbanescu, University of Amsterdam
- Dr. Alexandru Iosup, Delft University of Technology
- Prof. dr. Arend Rensink, University of Twente
- Dr. Joaquin Vanschoren, Eindhoven University of Technology
- Dr. Jan Hidders, Delft University of Technology
- Prof. dr. Remco Veltkamp, University of Utrecht

NWO and STW in collaboration with the research schools, ASCI, IPA and SIKS are currently planning the fourth edition Workshop ICT with Industry to be organized in November 2016. A Call for Case Studies has been published at: http://www.nwo.nl/over-nwo/organisatie/nwo-onderdelen/ew/bijeenkomsten/ict+with+industry+workshop

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