

Contents

- Directors Message
- ARCH Meets Industry
- KnowLang
- ACM CHI Award for Trio From TCD
- IFIP Working Group in Cost Rica
- Seoul for VTM 2014
- 2nd International Workshop on Testing The Cloud (TTC)
- First Irish Workshop on Effective Large Scale Computing for Big Data Analytics
- Lero Graduates
- Award for Liliana
- Award at the SIG
- Enterprise Quality Management Software
- Scratch 2014 Competition
- Global Software Engineering
- Barriers and Solutions
- A 'Big Welcome' to all the new people to Lero
- Research Council Awards
- Design Considerations for Parallel Performance Tools
- A Unique Collaboration
- Portfolio Management Simulation, Discussion & Networking
- Publications 2014

Research Council Awards

Sophie Lennon, who is a recipient of Irish Research Council Employment-based PhD grant, has commenced her studies in Lero under the supervision of Dr Ita Richardson. Sophie works with Intel, Shannon, where she will complete her PhD studies.

Klaas-Jan Stol was awarded an Irish Research Council "New Foundations" award valued at €6,000 euro for research on inner source adoption. Pádraig O'Leary was awarded an Irish Research Council "New Foundations" award valued at €6,000 for research on eLearning. Congratulations to each of them ■



Director's Message

Welcome to the first Lero newsletter of 2014. While we work to prepare our Research Centres proposal, you'll read of other Lero funding and new collaborations, plus details of activities of Lero researchers. Additionally, you'll read of distinctions and awards for our Lero colleagues for their work and publications. Enjoy!

Professor Mike Hinchey
Director

ARCH Meets Industry



Dr Ita Richardson

Dr Pádraig O'Leary

On the 21st of March Lero hosted the ARCH Industry Steering Committee. The committee is made up of 12 different industry partners. The aim of the meeting was to provide a forum for Industry Partners and ARCH researchers to meet and discuss on-going research. The meeting was attended by the ARCH Principle Investigators (PIs), ARCH Industry Members and ARCH Development Agencies. ■

ACM CHI Award for Trio From TCD

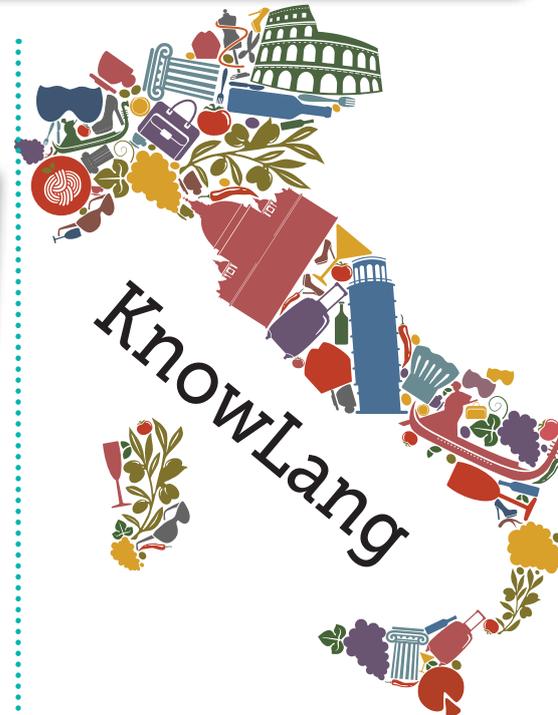
The ACM CHI Conference on Human Factors in Computing Systems is the premier international conference of Human-Computer Interaction. Gavin Doherty, Roman Atachiants and David Gregg have had a paper accepted for the conference and it has also won on Honourable Mention Award. Congratulations to each of them on this prestigious award ■



Dr Gavin Doherty



Dr David Gregg



Emil Vassev attended the ASCENS meeting in Modena, Italy (March 19-23) where he presented the KnowLang Toolset. KnowLang is a formal framework developed by Emil Vassev within the ASCENS WP3's mandate. The framework is dedicated to knowledge representation for self-adaptive systems and is considered as one of the "keystones" of the ASCENS project. With the KnowLang Toolset, software engineers may model, verify and compile a knowledge base for a self-adaptive system that is then given to the KnowLang Reasoner to reason about the system behaviour. Emil Vassev had an interview on AI and Formal Verification with the Machine Intelligence Research Institute (MIRI). The interview was posted on the MIRI's blog (<http://intelligence.org/blog/>), which has over 10,000 subscribers ■

2nd International Workshop on Testing The Cloud (TTC)



This workshop is co-located with ICST 2014 and will take place in Ohio in April. Anthony Ventrone and Christina Thorpe from UCD are general chairs for this workshop. The aim is to bring together researchers and practitioners interested in the difficult question of testing the cloud (a complex distributed, dynamic and interconnected system), hence, the call for regular scientific submissions and for industrial experience feedback. TTC are interested in contributions related to 'testing the Cloud' (i.e., testing the Cloud itself, for instance, its infrastructure), 'testing in the Cloud' (i.e., testing applications that are deployed in the Cloud), and 'testing with the Cloud' (e.g., using the Cloud capabilities to perform stress testing on an application). All the submissions describing approaches used in the industry, defining new methods to facilitate testing or identifying new challenges are relevant ■

IFIP Working Group in Cost Rica

The annual meeting of this working group, which has been in existence for nearly 20 years, was held in Tamarindo Costa Rica in February. The meeting was chaired by Kevin Ryan, former director of Lero and was also attended by Bashar Nuseibeh, former chief scientist. Other members attending included Anthony Finkelstein of UCL, Jeff Kramer of Imperial and Jo Ann Attlee of Waterloo. Guests included Jim Herbsleb of CMU and Peggy Storey of University of Victoria. Bashar spoke about privacy requirements while Kevin gave a short update on 'Lero at 10'. Kevin will represent 2.9 at the meeting of IFIP's technical committees in Luxembourg this June ■



Global Software Engineering

Dr Ita Richardson gave a talk in Lero about global software engineering which is undertaken when software teams are distributed, normally internationally. It continues to experience substantial growth and is fundamentally different to collocated development. As a result, software managers have a pressing need for support in how to successfully manage global project teams ■

Award at the SIG

Orla O'Dwyer received the Best Reviewer Award at the SIG IT Project Management pre-ICIS workshop held in Milan, Italy on December 14th, 2013 ■

Seoul for VTM 2014 VTC2014-Spring



The VTM workshop follows the formatting guidelines of IEEE VTC2014-Spring. Submissions should be original and limited to 5 double-column pages (Maximum of 2 additional pages allowed - 7 pages in total - with over-length page fee) in IEEE paper templates. All submissions should be written in English using 10-point font. Authors are invited to submit their

manuscripts in PDF format through Track Chair conference system (<http://vtc2014spring-wk.track-chair.com/track/1237/submit>). Please contact Dr. Soufiene Djahel (soufiene.djahel@ucd.ie), Prof. Damien Magoni (magoni@labri.fr) or Dr. Philip Perry (philip.perry@ucd.ie) if you have any questions about submitting your manuscripts. ■

First Irish Workshop on Effective Large Scale Computing for Big Data Analytics

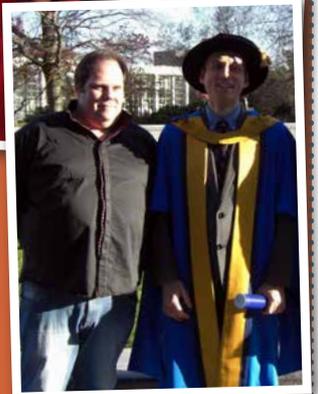


The aim of this workshop, which took place on 13th March in UCD, was to bring together members of the Irish academia and industry to raise awareness about recently started research programmes on Big Data Analytics (INSIGHT (SFI), Lero (SFI), Ceadar (EI), Graph CREST (JST)) and in particular large scale computing. The workshop facilitated discussion on software platforms, open libraries and data, as well as exciting real-world problems currently addressed through effective large scale computing solutions. Adam Comerford (MongoDB), gave the keynote talk entitled, Essential Tools for Your Big Data Arsenal. ■

Lero Graduates



L to R- Dr Hesham Shokry, Prof Mike Hinchey, Dr Norah Power, Dr Anila Mjeda, Dr Ita Richardson and Dr Oisín Cawley



Howell Jordan

Congratulations from all in Lero to Anila Mjeda, Hesham Shokry and Oisín Cawley who graduated on 21st January at the University of Limerick. While Howell Jordan graduated from UCD in December. Every success in the future to you all! ■

A Unique Collaboration

Lero in a unique collaboration with NUI Galway, Lero the Irish Software Engineering Research Centre and our hosts National College of Ireland will deliver a break-fast seminar on Project and portfolio management. The event will focus on project management of large scale agile projects and in particular project portfolios. Drawn from an extensive research study across eight organisations, attendees will learn about the challenges faced by organisations in relation to IT project portfolio management, and solutions to this challenge. Opportunity will be provided for discussion amongst participants. This forum will provide an opportunity for attendees to learn from one another's experiences and gain an increased awareness of problems and solutions from peers.

Registration available at <https://www.eventbrite.ie/e/how-lean-and-agile-are-you-tickets-10974794907>

Cloud Competency Centre, National College of Ireland (NCI) Mayor Street Lower International Financial Services Centre, Dublin 4th April 2014 ■

Award for Liliana

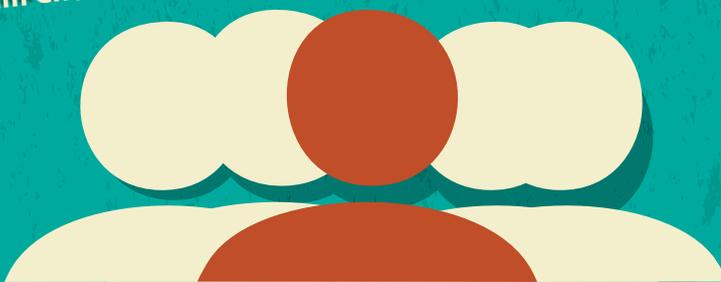


Liliana Pasquale won the Windows Azure for Research Award. Her proposal was, Minority Report: Using the Cloud to Enable Proactive Digital Forensic Investigations

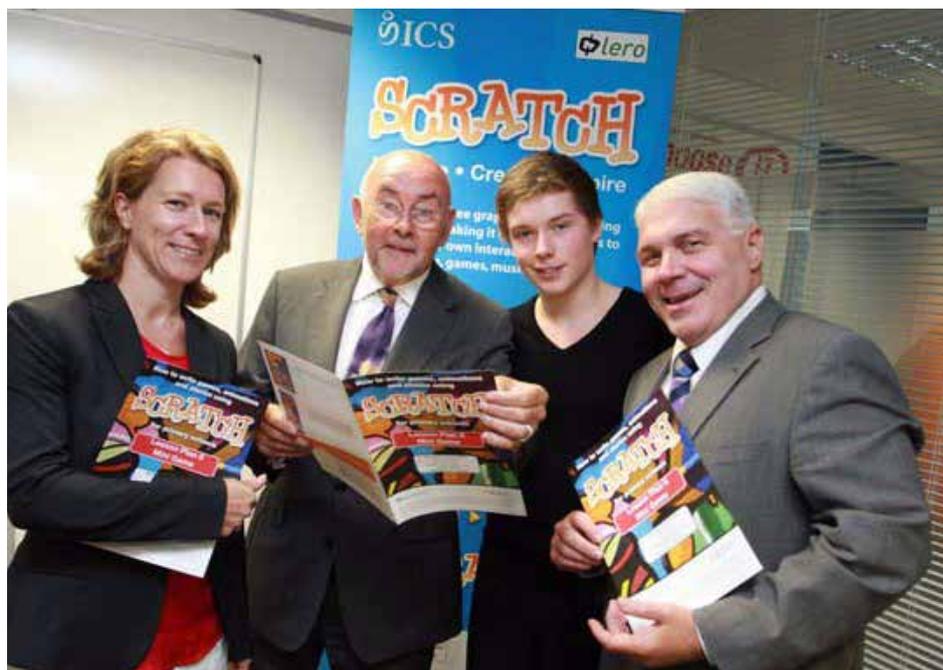
Abstract: The Minority Report project aims to develop an open source toolset and a demonstrative data set to support proactive digital forensic investigations in large and distributed systems. This tool can be very useful for system administrators and investigators since it can suggest in advance the likelihood of potential hypotheses of a crime. To exhibit good performance, even for large sets of events, our tool will leverage the HPC capabilities provided by Windows Azure to decompose each crime hypothesis into smaller and more tractable sub-hypotheses. We will perform the analysis of crime hypotheses by using the Event Calculus and SMT solvers (e.g., Z3). For information on this award please go to, http://blogs.msdn.com/b/msr_er/archive/2014/01/16/latest-recipients-of-windows-azure-for-research-awards-announced.asp ■

A 'Big Welcome' to all the new people to Lero

Sebastian Herold WELCOME Solomon Gizaw
Nikki Cranley WELCOME WELCOME WELCOME Sophie Lennon
Mehvish Rashid WELCOME Andrew Ryan
Muslim Chocklov WELCOME Christina Thorpe



Scratch 2014 Competition



Aspiring young software developers can now enter the 2014 ICS Scratch competition that aims to get primary and secondary school students involved in software development by using the Scratch programming language. The competition saw a massive increase in entrants last year, with 683 team projects submitted by 1,245 individual students. Education Minister Ruairi Quinn launched the Irish Computer Society's (ICS) 2014 Scratch competition, sponsored by Lero, that encourages students to be creative with software. It gives them the opportunity to create something new, giving students a taste of software development and the possible careers available in this rewarding and rapidly growing sector which has grown more than 10% in the

last year alone according to Enterprise Ireland. Clare McInerney, Education and Outreach Officer at Lero said "This year's Scratch competition looks to be stronger than ever and we look forward to viewing the competition entries. The use and popularity of Scratch in Irish schools has increased significantly since 2010, contributing to a larger number of submissions for the competition and a greater diversity of the types of Scratch projects being developed. The release of Scratch 2.0 will enable students to include new features such as building your own blocks, cloning, video sensing and cloud data." ■

Design Considerations for Parallel Performance Tools



Congratulations to Miguel Monasor who has passed his PhD defence with distinction (cum laude). Miguel was jointly supervised by Sarah Beecham (Lero), Aurora Vizcaino, and Mario Piattini (University Castilla-la Mancha). The examination committee were: Prof Juan Pavón, Dr John Noll, and Dr Felix Garcia. The title of Miguel's thesis is "A Framework for interaction training in Global Software Development" Congratulations Dr Monasor ■



Portfolio Management Simulation, Discussion & Networking

The latest in a series of fora for companies practising Agile and Lean methods was held in NUI Galway on March 7th. The event, focusing on leading edge research and practice in agile project and portfolio management, was attended by over 30 people from companies such as IBM, Lumension, Ericsson, Aró, Fidelity, CSGI, SourceDogg and NUI Galway. Deirdre Giblin (Agile Line Manager, Ericsson) shared the experiences of Ericsson in relation to the project management of large scale agile projects, while Dr. Orla O'Dwyer and Roger Sweetman disseminated research findings drawn from an extensive study across eight organisations. Attendees learnt about the project portfolio challenges faced by organisations, such as prioritisation and selection of the right projects, resource allocation and release management, as well as the impact these challenges can have on organisations. The research outlined some key solutions for overcoming these challenges. Further, attendees also learned about practices for constructing a portfolio of controls and managing control tensions within information systems projects and portfolios. The event adopted a highly interactive format with engaged discussion, and participants also had an opportunity to network before and after the event ■

Barriers and Solutions



Dr Ita Richardson gave a talk on 'Global Software Development: Barriers and Solutions', to employees of Ocuco Ltd in Dublin during February. Ocuco develop software for opticians, and approximately 100 employees attended the talk, 20 of them via video link from 5 other locations ■

Ahmad, A., Jamshidi, P., Pahl, C. (2014) 'Classification and comparison of architecture evolution reuse knowledge—a systematic review', *Journal of Software: Evolution and Process*.

Ahmad, A., Jamshidi, P., Pahl, C. and Khaliq, F. (2014) 'A Pattern Language for the Evolution of Component-based Software Architectures', In *Electronic Communications of the EASST, Special Issue on Patterns Promotion and Anti-patterns Prevention*

Ali, R., Dapliaz, F. and Giorgini, P. (2014) 'Requirements-driven Deployment: Customizing the Requirements Model for the Host Environment', *Journal of Software and Systems Modelling*.

Beecham, S. (2014) 'Motivating Software Engineers' in Ruhe, C. W. a. G., ed. *Software Project Management for the 21st Century*.

Cawley, O., Weibelzahl, S., Richardson, I. and Delaney, Y. (2014) 'Incorporating a self-directed learning pedagogy in the Computing Classroom: Problem-Based Learning as a means to improving Software Engineering learning outcomes' in Yu, L., ed. *Overcoming Challenges in Software Engineering Education: Delivering Non-Technical Knowledge and Skills*, IGI Global.

Creissac Campos, J., Doherty, G. and Harrison, M. D. (2014) 'Analysing interactive devices based on information resource constraints', *International Journal of Human-Computer Studies*.

Fitzgerald, B. and Stil, K.-J. (2014) *Researching Crowdsourcing Software Development: Perspectives and Concerns*, CSET: unpublished.

Fitzgerald, B. and Stol, K.-J. (2014) *Continuous Software Engineering and Beyond: Trends and Challenges*, translated by Hyderabad, India: ICSE.

Insaurrealde Carlos, V. E. (2014) 'Artificial Homeostasis for Vehicle Control Architecture of Unmanned Spacecraft', *Proceedings of the 2014 IEEE Aerospace Conference*,

J Portillo-Rodriguez, J. A. V., M.Piattino, Beecham S (2014) 'Using Agents to Manage Socio-Technical Congruence in a Global Software Engineering Project', *Information Sciences*, 264, 235-259.

J.M. Verner, M. A. B., T. Cerpa, Beecham, S (2014) 'Factors That Motivate Software Engineering Teams: A Four Country Empirical Study', *Journal of Systems and Software*.

Kroll, J., Richardson, I., Audy, J. L. N. and Fernandez, J. (2014) 'Handoffs Management in Follow-the-Sun Software Projects: A Case Study', in *Hawaii International Conference on System Sciences (HICSS)*, Big Island, Hawaii, January CSET2:

McHugh, M., McCaffery, F., MacMahon, S. T. and Finnegan, A. (2014) 'Improving Safety in Medical Devices - From Concept to Retirement' in Agarwal, D. B. F. a. D. A., ed. *Handbook of Medical and Healthcare Technologies*, Springer.

O'Hanlon, S., O'Regan, N., MacLulich, A., Cullen, W., Dunne, C., Exton, C. and Meagher, D. (2014) 'A comprehensive review of evidence that can assist in prevention, detection and management', *Journal of Neurology, Neurosurgery and Psychiatry*, 85(2).

O'Connor, R. and Laporte, C. Y. (2014) 'An Innovative Approach to the Development of an International Software Process Lifecycle Standard for Very Small Entities', *International Journal of Information Technology and the Systems Approach*, 7(1).

Silva, I. F. d., Neto, P. A. d. M. S., O'Leary, P., Almeida, E. S. d. and Meira, S. R. d. L. (2014) 'Software Product Lines Scoping and Requirements Engineering in a Small and Medium -Sized Enterprise: An Industrial Case Study', *Journal of Systems and Software*.

Stol, K.-J., Fitzgerald, B (2014) 'Evidence-Based Decision Making in Lean Software Project Management', in *36th International Conference on Software Engineering (SEIP)*, Hyderabad, India, CSET:

Stol, K.-J., Fitzgerald, B (2014) 'Two's Company, Three's a Crowd: A Case Study of Crowdsourcing Software Development', in *36th International Conference on software(ICSE)*, Hyderabad, CSET:

Wang, X., Kuzmickaja, I., Stol, K.-J., Abrahamsson, P. and Fitzgerald, B. (2014) 'Microblogging in Open Source Software Development: The Case of Drupal Using Twitter', *IEEE Software*.