The 18th CREST Open Workshop

Managing and Optimising Multiplicity Computing

22nd – 23rd March 2012
Engineering Front Executive Suite, Roberts Building

Programme

+++++++++22 March 2012 – DAY 1+++++++++

10:00 ***Arrival, Coffee and Pastries***

10:30 **Welcome and Introductions**
Mark Harman, CREST Centre, SSE Group, Department of Computer Science UCL, UK

11:15 **Multiplicity Computing: Engineering Software for Performance, Security, and Robustness**
Alexander Wolf, Department of Computing, Imperial College London, UK

11.45 **Discussion: establishing terms and goals.**

12.00 **From boolean to quantitative theories of software systems**
Thomas Henzinger, Institute of Science and Technology (IST), Austria

12:30 **Building a Multiscale Data Processing Appliance**
Gustavo Alonso, ETH, Zurich, Switzerland

13:00 ***Sandwich lunch at the venue***

14:00 **Extreme Specialization**
Steven Hand, University of Cambridge Computer Laboratory, UK

14:30 **Actor Programming Languages for Scalable Parallel and Distributed Systems**
Gul Agha, Department of Computer Science, University of Illinois, USA

15.00 ***Refreshments***

15:30 **Working Title: Genetic Improvement as a Means of Achieving Diversity**
Bill Langdon, CREST Centre, SSE Group, Department of Computer Science UCL, UK

16:00 **Automatic Workarounds: Exploiting the Intrinsic Redundancy of Software to Improve Reliability**
Antonio Carzaniga, Faculty of Informatics, University of Lugano, Switzerland

16.30 **Safe Software Updates via Multi-Version Execution**
Cristian Cadar, Department of Computing, Imperial College London, UK

17.00 **Discussion: SBSE and testing for Multiplicity and Diversity**
Mark Harman, CREST Centre, SSE Group, Department of Computer Science UCL, UK

18.00 **Wrap up**

18.15 ***Light Dinner at the venue***

+++++++++23 March 2012 – Day 2+++++++++

9:30 ***Arrival, Coffee and Pastries***

10:00 **Perspectives on Multiplicity Computing**
Joe Sventek, Department of Computing Science, University of Glasgow, UK

10:30 **Multicore Software Engineering: Perspectives For The Next Decade**
Victor Pankratius, Karlsruhe Institute of Technology, Germany

11:00 **Bottom-Up Cloud Optimization using Control Theory**
Jeremy Singer, Computing Sciences, University of Glasgow, UK

11:30 ***Refreshments***

12:00 **Working Title: SBSE on Multiple cores**
Enrique Alba, Department of Computer Science, University of Málaga, Spain

12:30 **Evolutionary Algorithms facing large-scale computing**
Marc Schoenauer, INRIA Saclay - Île-de-France, Université Paris Sud, France

13:00 ***Sandwich lunch at the venue***

14:00 **A search based approach for security testing**
Mariano Ceccato, FBK (Fondazione Bruno Kessler), Italy

14:30 **Searching for Diverse Software Engineering Solutions**
Robert Feldt, Department of Computer Science and Engineering, Chalmers University of Technology, Sweden

15:00 **Multiple Views of Multiplicity Computing: Opportunities Viewed through a Cyber-Security Lens**
Richard Schantz, The Distributed Systems Technology Group, BBN Technologies, USA

15.30 ***Refreshments***

16:00 **Discussion: Next steps for Multiplicity Computing**
Alexander Wolf, Department of Computing, Imperial College London, UK

16.45 **Wrap up**

17.15 **Close**