A Summary on the 37th International Conference on Software Engineering (ICSE 2015)
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Abstract
This summary reports on three separate events, the main conference and two co-located workshops, which were held at the International Conference on Software Engineering (ICSE) in 2015 in Florence. The workshops are the third international workshop on RELeng ENGineering (RELENG) and the first international workshop on Complex faULts and Failures in Large E Software Systems (COUFLESS). This summary reports on discussions held and highlights some observations made during these events.

Introduction
I am working on building high assurance secure application using security patterns for capability-based systems. I presented my work in two different workshops, RELENG and COUFLESS, and attended the main conference of ICSE2015. It was a privilege to be able to attend ICSE and talk with leading software engineering researchers.

ICSE 2015 – Main Conference
The main conference sessions were very diverse but testing and debugging were strongly represented. The sessions on security and on architecture were the most related to my research.

The security sessions provided an opportunity to connect with the authors of one of the papers, to plan a visit to his lab to identify work areas complementary to our work. Having the opportunity to attend this session has inspired me to consider security not only from an external security perspective but also from an internal security perspective. I plan to identify a list of attacks that my secure design can protect against, giving more assurance about the security of the system. The architecture sessions were interesting in that they also focused on security and validation. I was able to discuss architecture security with the authors.

Intriguing keynotes were given by Claudio Silenzi (Ferrari), Susan Landau (Google) and Gerard Holzmann (NASA/JPL). Silenzi talked about the software development/deployment lifecycle in Ferrari, which is about 14 days. Landau focused on privacy around metadata in which she showed that metadata can be used to gather personal confidential information. Gerard Holzmann stressed the importance of formal methods and formal analysis for software engineering. He presented an idea, using bloom filters to reduce search space and randomization, in which formal verification for a garbage collector can be completed within minutes. This challenges the impression that formal verification takes a very long time to complete. Note that his idea presents a probabilistic verification rather than deterministic verification.

ICSE 2015 – RELENG
The RELENG workshop was a very interesting workshop to attend. About 50% of the participants were industry practitioners and the other 50% from academia. I was excited to get valuable feedback from the audience, from both industry and academia. My presentation on securing a continuous deployment (CD) pipeline was well received and garnered a lot of discussion. The discussions were around current practices of industry practitioners, security concerns for continuous deployment pipeline, past experiences on pipeline being compromised. Several practitioners also shared their ongoing work with regards to the CD pipeline. These discussions have helped me validate that the work in our research group is tackling industry pain-points. They also provide guidance to determine the priorities for future work. I had very interesting and lively discussions with participants, exchanging ideas and discovering concerns around problems that we might want to tackle in our future work.

ICSE 2015 – COUFLESS
The COUFLESS workshop had fewer participants – about 15 people. This allowed for more lively and meaningful discussions focused on closely related topics. The keynote was very informative, describing classification of bugs and types of software fault mitigation. Each of the mitigation methods was mapped to the types of bugs it can address. The keynote speaker pointed out that software rejuvenation is one way to handle aging-related bug and finding optimal time to perform software rejuvenation is an important research issue.

I presented a paper on suppressing false alarms during cloud operation and received feedback on other techniques that can be considered. This led to fruitful discussions, which include potential collaboration with one of the participants.

ICSE 2015 – Social Events
The social events and breaks were a highlight of the conference. I met researchers whose work I have been following! Having renowned researchers who found my research topic interesting has been inspiring.

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