

MythSE – Myths in Software Engineering

Half day ICSM 2007 Working Session

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1 Theme and Goals of Working Session

Using a cell phone while pumping gas can cause an explosion. – True or false?

Myths and urban legends have become integrated into our daily lives. TV shows, such as MythBusters, tackle myths through experiments, which attempt to either debunk these myths or to explain the facts behind these myths.

Myths exist also in science and hinder the progress of knowledge. For instance, the annual *Workshop on Duplicating, Deconstructing, and Debunking* provides a forum to “deconstruct prior findings by providing greater, in-depth insight into causal relationships or correlations” in the computer architecture domain¹.

Software Engineering (SE) contains its own set of myths and urban legends. The experience gained by researchers in the software maintenance community should be valuable in studying various SE myths and in separating myths from facts.

The goal of this half-day working session is to increase awareness of many SE myths and to offer an open venue to discuss and understand them. The organizers are collecting popular SE myths online through a Wiki. Two myths will be selected for discussion in the working session.

For each myth, we will invite advocates and opponents to facilitate the discussion. The deliverable of the working session will be a collection of arguments and facts (e.g., published studies and experience reports) for each myth. Additionally, we will poll the audience before and after the session on each myth to decide if it is *myth or fact*.

We will start the online discussion with the following list of myths (collected among participants of ICSE 2007). The myth in the list are phrased in a provocative tone on purpose (in order to encourage the participation of advocates and opponents):

- *Clones are evil.* For a long time code cloning was considered harmful; however, recent studies show that cloning might even be beneficial and desirable.

¹<http://www.ece.wisc.edu/~wddd/2007/>

- *Bugs reside in complex code.* In the quest for metrics that predict bugs, many tools report various code complexity metrics; however, recent studies show that most complexity metrics correlate with just LOC. Is it really complexity that makes programs fail?
- *Aspect-oriented programs are easy to maintain.* Aspect-oriented programming seems to be a story of successes; however, after ten years of active research (including its own conference), it is not clear whether aspect-oriented programs are any easier to maintain than traditional programs.

2 Relevance to Software Maintenance

The software maintenance community has already dealt with many myths such as “Goto considered Harmful”. Through this working session, the software maintenance community can express their concerns about new SE myths based on the insight they gained from studying the evolution of many large projects. By communicate these myths to the rest of the SE community, we can avoid the spread of the myths. By avoiding the spread of such myths as soon as possible, we can ensure that they are not integrated into software development practices and we can reduce the future costs of maintaining such myth-ridden software systems.

3 Format of Session

The session will be highly interactive. We will chose two popular myths for discussion during the session. Each myth will be covered in a session with a coffee break in the middle. We plan to have:

- *Facilitators.* For each myth, we will invite facilitators (advocates and opponents) based on the participants in the Wiki discussion. The facilitators will give a short five-minute presentation to present their position, which they will have to justify in the discussions during the session.

- *Polls.* We will poll the participants of the session to rate each myth as “Busted”, “Plausible”, and “Confirmed”. The rating will be done *before* and *after* the discussion. The change in polls will indicate which side of the discussion had the more convincing arguments.

We will reserve at least 60 minutes for discussion for each myth and we will cover two myths in the working session.

4 Use of Wiki

We will use a Wiki throughout the life-cycle of the working session. The Wiki will act as a valuable reference for researchers interested in further investigating the discussed myths. Ideally, each edition of the working session would cover two new myths. We hope that the Wiki will eventually become an important highly cited living reference of SE myths.

- *Before the working session,* we will facilitate the discussion on myths by providing a list of our favorite myths and actively seeking further myths. Additionally, other researchers will be encouraged to participate. Others can provide their thoughts, positions, and pointers to earlier work.
- *During the working session,* we will archive annotated slides and notes collected during the discussion.
- *After the working session,* we will continue the discussion, collect feedback, and plan follow-up events, e.g., a myth workshop at ICSE 2008 or ICSM 2008.

The location of the Wiki is as follows:

<http://mythse.wikispaces.com/>

5 Participant Solicitation

We will announce the working session on the major software engineering lists, such as SEWorld and Ecoop-Info. We will also target specialized lists. If ICSM working sessions are given a small funding budget, we will promote our working session with a limited number of “Myths in SE” shirts and stickers.

6 Working Session Organizers

Ahmed E. Hassan is an Assistant Professor with the Department of Electrical & Computer Engineering at the University of Victoria. He received both the Ph.D. and MMath degrees from the School of Computer Science at the University of Waterloo in Canada.

Dr. Hassan spent the early part of his career helping architect the Blackberry wireless platform at Research In Motion (RIM). He contributed to the development of protocols, simulation tools, and software to ensure the scalability and reliability of RIM’s global infrastructure. Dr. Hassan worked for IBM Research at the Almaden Research Lab in San Jose and the Computer Research Lab at Nortel Networks (BNR) in Ottawa.

Dr. Hassan spearheaded the organization and creation of the Mining Software Repositories (MSR) workshop series at ICSE and its associated research community. He recently co-edited a special issue of the IEEE Transaction on Software Engineering (TSE) on MSR.

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Thomas Zimmermann received his diploma degree in computer science from the University of Passau in 2004. He is currently a PhD student at the Saarland University in Saarbrücken, Germany. Mr. Zimmermann’s current research focuses on systematically mining version archives: his tools automatically identify related changes, method usage patterns, and crosscutting concerns. In 2006, he was an intern at Microsoft Research where he analyzed the bug database of Windows Server 2003 to successfully predict defect-prone components. In September 2007, Mr. Zimmermann will join the Department of Computer Science at the University of Calgary as an assistant professor.

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