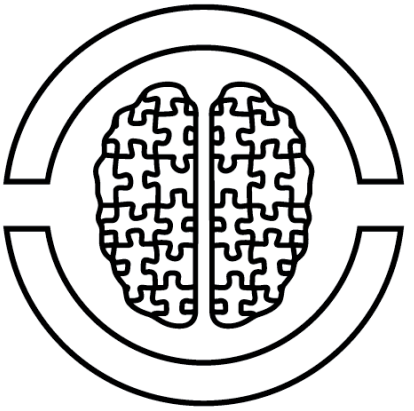

ECSEE

European Conference
Software Engineering Education 2016

Georg Hagel, Jürgen Mottok (Editors)

Seeon Monastery

Germany

30th June and 1st July 2016

SHAKER
Verlag

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Learning of Software Engineering - Registered Association

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EVELIN Project
(Experimental Improvement of Software Engineering Education)

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Preamble of the editors

Software Engineering (SE) is an important discipline and core part of almost all Computer Science curricula of universities. Challenges in today's software development include increasing system complexity, short development cycles, shorter time to market, continuous change, and expected high quality of the software. The rapid and continuing growth of the software industry creates challenges for software engineering education. The emergence of software engineering as a relevant term in the discipline of computer and engineering education programs created significant challenges for educators.

The European Conference on Software Engineering Education 2016 (ECSEE 2016) will give place and time for discussions on the following questions:

- Software engineering education has to deal with these challenges. How can students or employees be prepared to master these challenges?
- What are best practices to help them to work in different domains, ranging from app development for mobile devices to the development of really big applications for mainframe systems, from game development to working on highly secure systems?
- How can we support students in their student life-cycle and how can we prepare them for lifelong learning?
- How can we ensure that future software engineers meet industrial needs, with respect to technical as well as soft skills?

The conference will be rounded off by three keynote contributions:

- "On the Future of Educational Programming Environments – Ideas and Speculations", Prof. Dr. Michael Kölling, School of Computing, University of Kent, in Canterbury, UK.
- "What can we learn from Software Engineering for Courseware Production", Prof. Dr. Carlos Delgado Kloos, Universidad Carlos III de Madrid, Spain.
- "There is a System Out There! Software Education from Programming to Engineering", Prof. Dr. Amir Tomer, Kinneret College on the Sea of Galilee, Israel.

The first ECSEE 2016 conference day will be completed by a conference dinner where we have the opportunity within a relaxed ambience to get together, exchange ideas, discuss and reflect on students work. Tobi Ostermeier and Tom Ditz will present a dinner speech in the form of impro-theater. They will analyse which conference topics of the ECSEE 2016 can form the basis for the improvised stories.

In conclusion we would like to express our gratitude to all partners and supporters of the conference. We want to express especial thanks to the involved colleagues who have undertaken to support the organisation of this conference and who have done a convincing review work. A collection of fruits in the academic work in software engineering education is given in this conference proceeding.

Kempten and Regensburg, May 2016

Prof. Dr. Georg Hagel, Prof. Dr. Jürgen Mottok

ECSEE 2016 General Chairs

Preamble from an educational perspective

Looking back at developments in "Experimental Improvements of Learning in Software Engineering" within the past two years and the many emerging contributions, as well as the discussion outside the project, which, inter alia, takes place at the "European Conference Software Engineering Education", the perspective has focused on teaching and learning.
At the first "European Conference Software Engineering Education" in 2014, a rather large number of papers addressed the question on how quickly changing requirements in an agile environment can be intercepted and taken into account in specialized higher education, to "produce" "on-demand graduates". Meanwhile, the issue tends to concentrate more on didactics, as can be seen in the following developments:

1) The authors for the most part are not expecting direct casual effects or chain effects from their didactic preparations, changes and reflections anymore. There is an increased awareness towards the complexity of factors and aspects regarding interactions between personal, situational und attitudinal factors in higher education didactics.

2) Different monitoring and survey procedures, including the corresponding instruments, to assess the teaching-learning scenario (reflexive processes, competence assessments) during higher education lectures were developed to some degree. On one hand qualitative and quantitative oriented methods of different ranges evolved, on the other hand results are being interpreted more carefully.

3) It is clearly visible that Software Engineering Education involves a change of perspective in several regards. A didactic of software engineering includes a systematic handling of didactic questions, considering at least the students, the teachers, the contents, social forms, temporal and local conditions as well as methods and media equipment. The contents is – as shown – only one amongst many important aspects. Furthermore, the singular design of a teaching-learning arrangement on the meso level is neither a didactic concept nor a teaching methodology or a theoretical approach. As of today, the described tendency towards pedagogic-didactical facets is only selectively existent, but

4) nevertheless experts in software engineering do not consider this a loss of image but rather a gain and a necessary step. General didactic impulses as well as inter- and transdisciplinary discourses are regarded as an advancement.

While the itinerary of the conference in 2014 mentioned „a collection of fruits in the academic work in software engineering education is given in this conference proceeding", it evolved into a fruit basket or a fruit still live in the meantime.
Without doubt, further steps were taken to improve software engineering lectures. The challenge for future years is the systematic review of singular "field trials" and their evaluations, the merging of results and the establishment of a theoretical reconnection and foundation. Only this allows a derivation of specific didactics for software engineering.

Regensburg, May 2016

Prof. Dr. Irmgard Schroll-Decker

ECSEE 2016 Co-Chair

Organizer

Learning of Software Engineering - Registered Association

Chairman
Prof. Dr. Jürgen Mottok,
Ostbayerische Technische Hochschule Regensburg
OTH Regensburg
Seybothstraße 2, 93053 Regensburg
Gemany
juergen.mottok@oth-regensburg.de

Assistant chairman
Prof. Dr. Georg Hagel
Hochschule Kempten
University of Applied Sciences Kempten
Bahnhofstr. 61, 87435 Kempten
Germany
georg.hagel@hs-kempten.de

Assistant chairman
Prof. Dr. Dieter Landes
Hochschule Coburg
University of Applied Sciences Coburg
Friedrich-Streib-Straße 2, 96450 Coburg
Germany
landes@hs-coburg.de

Partner

EVELIN (Experimental Improvement of Software Engineering Education)

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More information under www.evelinprojekt.de and www.qualitätspakt-lehre.de.

Working Group Didactics of Software Engineering (FDAK SE)

Coordinator
Prof. Dr. Jürgen Mottok
Ostbayerische Technische Hochschule Regensburg
Fakulty Electrical Engineering and Information Technology
Software Engineering Laboratory for Safe and Secure Systems (LaS³, www.las3.de)
Seybothstrasse 2
93053 Regensburg
juergen.mottok@oth-regensburg.de

The FDAK SE is located at

DiZ - Zentrum für Hochschuldidaktik
Goldknopfgasse 7
85049 Ingolstadt
Germany

More information under www.fdak-se.de and www.diz-bayern.de

Partner

Gesellschaft fuer Informatik e.V.
GI – Wissenschaftszentrum
Ahrstrasse 45, 53175 Bonn
Germany

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CONCEPTNET GmbH
Bruderwöhrdstr. 15b, 93055 Regensburg
Germany
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Editors and General Chairs

Prof. Dr. Georg Hagel

Hochschule Kempten

University of Applied Sciences Kempten

Bahnhofstr. 61, 87435 Kempten

Germany

georg.hagel@hs-kempten.de

Prof. Dr. Jürgen Mottok

Ostbayerische Technische Hochschule Regensburg

OTH Regensburg

Seybothstraße 2, 93053 Regensburg

Gemany

juergen.mottok@oth-regensburg.de

Committee

General Chair
Jürgen Mottok, Ostbayerische Technische Hochschule Regensburg, Germany

Georg Hagel, Kempten University of Applied Science, Germany

Co-Chairs
Hans Gruber, University Regensburg, Germany

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Irmgard Schroll-Decker, OTH Regensburg, Germany

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Ye Tao, Qingdao University of Science and Technology, Qingdao, China

Ramin Tavakoli Kolagari, Nuremberg Institute of Technology, Germany

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