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09/2019 VOL.62 NO.09

Computational Sustainability

Computing for a Better World and a Sustainable Future

Augmented Reality Gets Real

Alloy: A Language and Tool for Exploring Software Designs

Sustaining Open Collaboration in Universities

Association for Computing Machinery

The Essentials of Modern Software Engineering

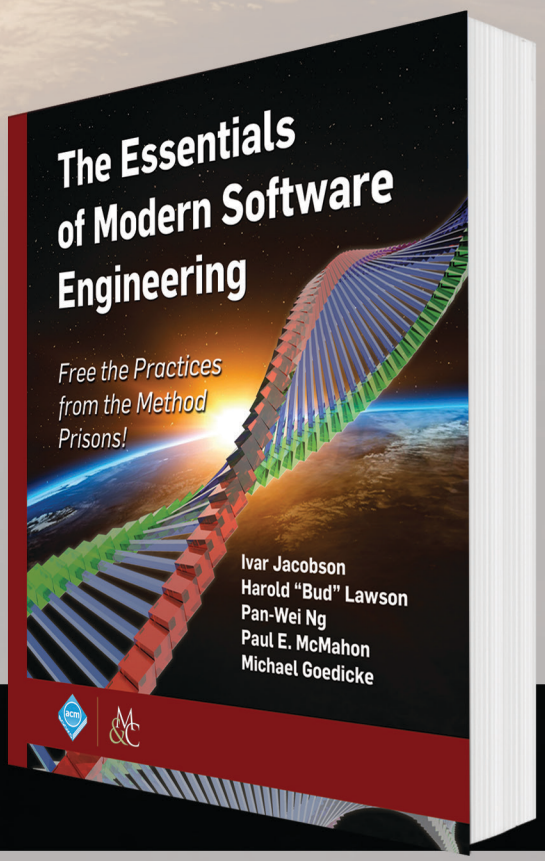
Free the Practices from the Method Prisons!

This text/reference is an in-depth introduction to the systematic, universal software engineering kernel known as "Essence." This kernel was envisioned and originally created by Ivar Jacobson and his colleagues, developed by Software Engineering Method and Theory (SEMAT) and approved by The Object Management Group (OMG) as a standard in 2014. Essence is a practice-independent framework for thinking and reasoning about the practices we have and the practices we need. **It establishes a shared and standard understanding of what is at the heart of software development. Essence is agnostic to any particular methods, lifecycle independent, programming language independent, concise, scalable, extensible, and formally specified**. Essence frees the practices from their method prisons.

HIGH PRAISE FOR THE ESSENTIALS OF MODERN SOFTWARE ENGINEERING

"Essence is an important breakthrough in understanding the meaning of software engineering. It is a key contribution to the development of our discipline and I'm confident that this book will demonstrate the value of Essence to a wider audience. It too is an idea whose time has come." – Ian Somerville, St. Andrews University, Scotland (author of *Software Engineering, 10th Edition*, Pearson)

"What you hold in your hands (or on your computer or tablet if you are so inclined) represents the deep thinking and broad experience of the authors, information you'll find approachable, understandable, and, most importantly, actionable." – Grady Booch, IBM Fellow, ACM Fellow, IEEE Fellow, BCS Ada Lovelace Award, and IEEE Computer Pioneer



Ivar Jacobson, Harold "Bud" Lawson, Pan-Wei Ng, Paul E. McMahon, Michael Goedicke

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Time to reflect and look ahead

/ 30th anniversary of the fall of the Berlin Wall
/ 30th ACM Hypertext Conference
/ 30th anniversary of the WWW
/ 20th anniversary of the first ACM Hypertext Conference in Germany

Scope

The ACM Hypertext conference is a premium venue for high quality peer-reviewed research on hypertext theory, systems, and applications. It is concerned with all aspects of modern hypertext research including social media, semantic web, dynamic and computed hypertext and hypermedia as well as narrative systems, and applications. The theme of HT'19 is **HYPERTEXT – TEAR DOWN THE WALL.**

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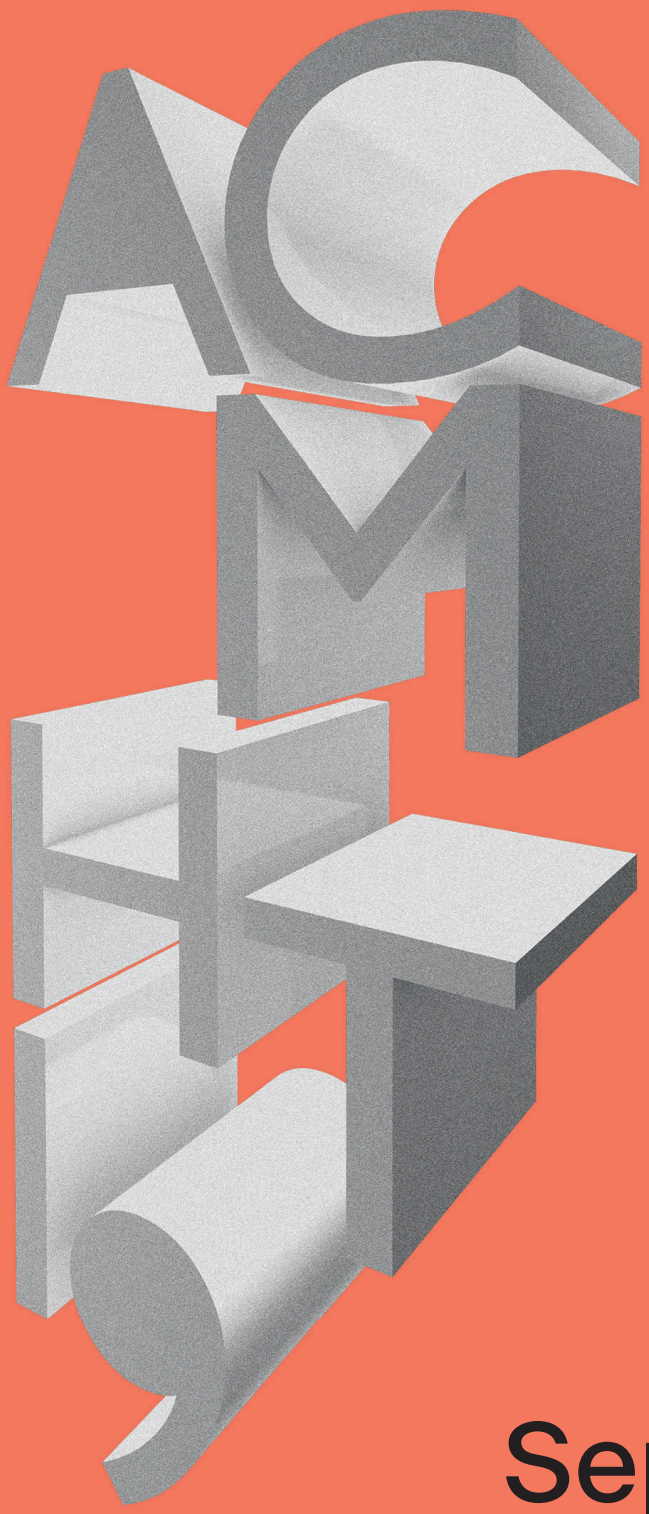
30th Anniversary ACM Conference on Hypertext and Social Media



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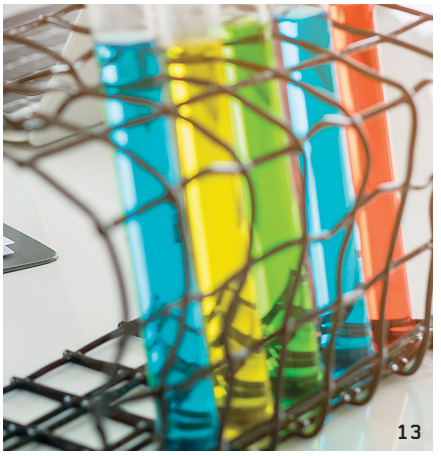

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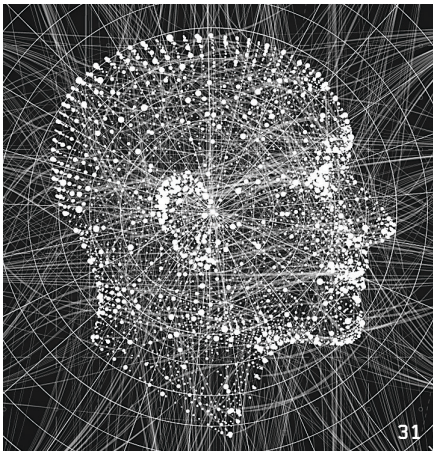

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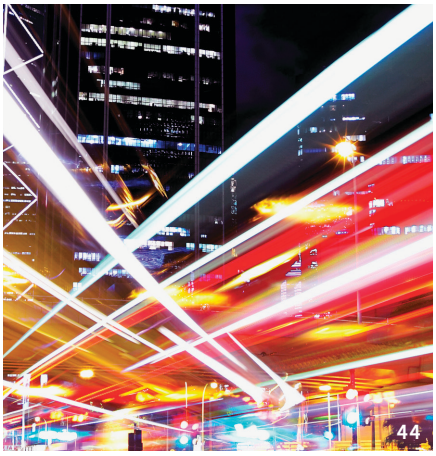

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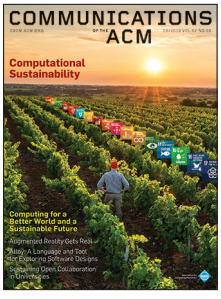

About the Cover: Computer and information researchers combine efforts with other scientific disciplines in an extraordinary pursuit: to solve the mounting challenges of a sustainable future for all of humanity. Their story begins on p. 56. Cover composition by Andrij Borys Associates; photo by Jack Frog.

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