

DEPARTMENT: DEPARTMENTS

Cyber Insecurity and Cyber Libertarianism

Here we are, 70 years into the computer age and after three ACM Turing Awards in the area of cryptography, and we still do not seem to know how to build secure information systems. And yet, our community marches forward with ...

Moshe Y. Vardi

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Can Liberty Survive the Digital Age?

Online social media have provided a megaphone for voices that might not have been heard except in limited circles. The amplifying effect, however, gives visibility to deliberate (or ignorant) misinformation, hate speech, incitement ...

Vinton G. Cerf

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DEPARTMENT: BLOG@CACM

Ending Null Pointer Crashes

Void safety, says Bertrand Meyer, relies on type declarations and static analysis.

Bertrand Meyer

Pages 8-9

COLUMN: NEWS

Combating Cancer With Data

Supercomputers will sift massive amounts of data in search of therapies that work.

Esther Shein

Pages 10-12

Making Chips Smarter

Advances in artificial intelligence and machine learning are motivating researchers to design and build new chips to support different computing models.

Samuel Greengard

Pages 13-15

Bionics in Competition

Developers of innovative assistive devices compete as a means of networking with each other.

Keith Kirkpatrick

Pages 16-17

The Internet of Things

2009 ACM Prize recipient Eric Brewer, 2004 ACM A.M. Turing Award co-recipient Vint Cerf, 2016–2017 Athena Lecturer Jennifer Rexford, ACM Grace Murray Hopper Award recipient Martin Casado, ACM Fellows Nick Feamster and Jim Kurose ...

CACM Staff

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COLUMN: LAW AND TECHNOLOGY

The Anonymization Debate Should Be About Risk, Not Perfection

Focusing on the process of anonymity rather than pursuing the unattainable goal of guaranteed safety.

Woodrow Hartzog, Ira Rubinstein

Pages 22-24

COLUMN: EDUCATION

Preparing Tomorrow's Faculty to Address Challenges in Teaching Computer Science

Using a "boot camp" workshop for new faculty orientation.

Leo Porter, Cynthia Lee, Beth Simon, Mark Guzdial

Pages 25-27

COLUMN: VIEWPOINT

Toward a Ban on Lethal Autonomous Weapons: Surmounting the Obstacles

A 10-point plan toward fashioning a proposal to ban some — if not all — lethal autonomous weapons.

Wendell Wallach

Pages 28-34

SECTION: PRACTICE

Making Money Using Math

Modern applications are increasingly using probabilistic machine-learned models.

Erik Meijer

Pages 36-42

MongoDB's JavaScript Fuzzer

The fuzzer is for those edge cases that your testing did not catch.

Robert Guo

Pages 43-47

Research for Practice: Cryptocurrencies, Blockchains, and Smart Contracts; Hardware for Deep Learning

Expert-curated guides to the best of CS research.

Peter Bailis, Arvind Narayanan, Andrew Miller, Song Han

Pages 48-51

SECTION: CONTRIBUTED ARTICLES

Who Owns the Social Web?

User attitudes toward online intellectual property reveal how far social norms have strayed from legal notions of ownership.

Catherine C. Marshall, Frank M. Shipman

Pages 52-61

Responsible Research and Innovation in the Digital Age

RRI requires doing the best science for the world, not only the best science in the world.

Marina Jirotko, Barbara Grimpe, Bernd Stahl, Grace Eden, Mark Hartswood

Pages 62-68

SECTION: REVIEW ARTICLES

Contest Theory

Exploring the basic game theory models of contests found in online services.

Milan Vojnović

Pages 70-80

SECTION: RESEARCH HIGHLIGHTS

Technical Perspective: Functional Compilers

"Exploiting Vector Instructions with Generalized Stream Fusion" points out that stream fusion by itself is not well suited for generating bulk instructions such as vector or SIMD instructions.

Guy Blelloch

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Exploiting Vector Instructions with Generalized Stream Fusion

Programmers should not have to sacrifice code clarity or good software engineering practices to obtain performance. This work shows how to attain this goal for high-level Haskell in the domain of sequence-processing functions ...

Geoffrey Mainland, Roman Leshchinskiy, Simon Peyton Jones

Pages 83-91

Technical Perspective: Building Knowledge Bases from Messy Data

"DeepDive: Declarative Knowledge Base Construction" is a prime example of groundbreaking work in the area of Knowledge Base Construction.

Alon Halevy

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DeepDive: Declarative Knowledge Base Construction

We describe DeepDive, a system that combines database and machine learning ideas to help to develop knowledge base construction systems.

Ce Zhang, Christopher Ré, Michael Cafarella, Christopher De Sa, Alex Ratner, Jaeho Shin, Feiran Wang, Sen Wu

Pages 93-102

COLUMN: LAST BYTE

Beyond 'Star Trek'

On a mission to boldly go where no man has gone before, the series and movies somehow missed some promising technologies . . .

David Allen Batchelor

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DEPARTMENT: DEPARTMENTS

Listening to Professional Voices: Draft 2 of the ACM Code of Ethics and Professional Conduct

For the first time since 1992, the ACM Code of Ethics and Professional Conduct (the Code) is being updated. We look forward to receiving your comments on these suggested changes and your requests for additional changes as we ...

Bo Brinkman, Catherine Flick, Don Gotterbarn, Keith Miller, Kate Vazansky, Marty J. Wolf

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