

DEPARTMENT: CERF'S UP

## Turing Test 2

Computer programs are being used to emulate humans to fool less-sophisticated programs into treating computer-generated actions as if they originate from a human. This is an important practical problem.

*Vinton G. Cerf*

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DEPARTMENT: EDITORIAL

## Toward Sustainable Access: Where Are We Now?

The publishing landscape is changing, and ACM with it. We take this opportunity to describe what ACM thinks about recent trends, recent changes, and the future.

*Jack Davidson, Joseph Konstan, Andrew A. Chien, Scott Delman*

Pages 6-7

DEPARTMENT: VARDI'S

INSIGHTS

## How We Lost the Women in Computing

We cannot understand the current gender disparity in computing without understanding the history of women in computing. How did we lose the women in computing? They did not just leave; they were pushed out.

*Moshe Y. Vardi*

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DEPARTMENT: LETTERS

TO THE EDITOR

## Get ACM (and *Communications*) Out of Politics

Recent editorial policy seems to have let ACM morph into what I would call the left-leaning ACM.

*CACM Staff*

Pages 20-11

DEPARTMENT: ACM'S

ELECTION

## ACM's 2018 General Election

Meet the candidates who introduce their plans—and stands—for the Association.

*CACM Staff*

Pages 13-21

DEPARTMENT: BLOG@CACM

## Commenting on Code, Considering Data's Bottleneck

Edwin Torres considers the enduring value of code comments, while Walid Saba wonders if we have overreacted to the knowledge acquisition bottleneck.

*Edwin Torres, Walid Saba*

Pages 24-25

COLUMN: NEWS

## Shrinking Machines, Cellular Computers

Scientists are using DNA and RNA to build the world's tiniest robots and computing devices.

*Gregory Mone*

Pages 26-28

**Using Functions  
for Easier**

## Programming

Functional programming languages automate many of the details underlying specific operations.

## Finding a Healthier

### Approach to Managing Medical Data

Researchers are exploring ways to put medical data to greater use while better protecting privacy.

*Samuel Greengard*  
Pages 31-33

COLUMN: LAW AND

#### TECHNOLOGY

### Is the Law Ready for Driverless Cars?

Yes, with one big exception.

*Ryan Calo*  
Pages 34-36

COLUMN: PRIVACY AND

#### SECURITY

### Putting Trust in Security Engineering

Proposing a stronger foundation for an engineering discipline to support the design of secure systems.

*Fred B. Schneider*  
Pages 37-39

COLUMN: EDUCATION

### Scale or Fail

Moving beyond self-selected computer science education in Switzerland.

*Alexander Repenning*  
Pages 40-42

COLUMN: VIEWPOINT

### The March Into the Black Hole of Complexity

Addressing the root causes of rapidly increasing software complexity.

*Harold "Bud" Lawson*  
Pages 43-45

## Science, Policy, and Service

Some thoughts on the way forward.

*Margaret Martonosi*  
Pages 46-48

SECTION: PRACTICE

### Research for Practice: Cluster Scheduling for Datacenters

Expert-curated guides to the best of CS research.

*Malte Schwarzkopf, Peter Bailis*  
Pages 50-53

## Canary Analysis Service

Automated canarying quickens development, improves production safety, and helps prevent outages.

*Štěpán Davidovič, Betsy Beyer*  
Pages 54-62

## How Is Your Week Going So Far?

Praise matters just as much as money.

*Kate Matsudaira*

Pages 63-64

SECTION: CONTRIBUTED

## ARTICLES

### **More Than the Code: Learning Rules of Rejection in Writing Programs**

A teacher and students coding together make explicit the unwritten rules of programming.

*Josh Tenenberg, Wolff-Michael Roth, Donald Chinn, Alfredo Jornet, David Socha, Skip Walter*

Pages 66-71

### **Internet Freedom in West Africa:**

### **Technical Support for Journalists and Democracy Advocates**

The U.S. State Department's Internet Freedom agenda is being adapted to help them communicate without DNS and IP address filtering.

*Richard R. Brooks, Lu Yu, Yu Fu, Oluwakemi Hambolu, John Gaynard, Julie Owono, Archippe Yepmou, Felix Blanc*

Pages 72-82

### **Data Acquisition in Vehicular Ad**

### **Hoc Networks**

The data comes from multiple optimal sources in parallel, helping reduce addressing and data-acquisition latency.

*Xiaonan Wang*

Pages 83-88

SECTION: REVIEW

## ARTICLES

### **Speech Emotion Recognition: Two Decades in a Nutshell, Benchmarks, and Ongoing Trends**

Tracing 20 years of progress in making machines hear our emotions based on speech signal properties.

*Björn W. Schuller*

Pages 90-99

SECTION: RESEARCH

## HIGHLIGHTS

### **Technical Perspective: Breaking the Mold of Machine Learning**

"Never-Ending Learning" is the latest and one of the most compelling incarnations of Tom Mitchell and his collaborators' research investigating how to broaden the machine learning field.

*Oren Etzioni*

Page 102

### **Never-Ending Learning**

In this paper we define more precisely the never-ending learning paradigm for machine learning, and present one case study: the Never-Ending Language Learner (NELL), which achieves a number of the desired properties of a never ...

*T. Mitchell, W. Cohen, E. Hruschka, P. Talukdar, B. Yang, J. Betteridge, A. Carlson, B. Dalvi, M. Gardner, B. Kisiel, J.*

*Krishnamurthy, N. Lao, K. Mazaitis, T. Mohamed, N. Nakashole, E. Platanios, A. Ritter, M. Samadi, B. Settles, R. Wang, D.*

*Wijaya, A. Gupta, X. Chen, A. Saparov, M. Greaves, J. Welling*

Pages 103-115

COLUMN: LAST BYTE

## **Free Press**

When all online news and comment can be digitally manipulated, some might recall a more trustworthy way to spread the word.

*Ken MacLeod*

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