OUTLOOK 2021

This issue examines emerging technologies and applications in the computer field.

FEATURES CONTINUED

70 Token Economics in Real Life: Cryptocurrency and Incentives Design for Insolar’s Blockchain Network
HENRY M. KIM, MAREK LASKOWSKI, MICHAEL ZARGHAM, JUULKMAR TURESSON, MATTHEW BARLIN, AND DANIL KABANOV

84 CYBER-PHYSICAL SYSTEMS
Edge Artificial Intelligence Chips for the Cyberphysical Systems Era
HIROSHI FUKETA AND KUNIO UCHIYAMA

89 CYBERTRUST
Improving the Trustworthiness of Software Through Rigorous Data Type Design
RICHARD D. RIEHE AND JAMES BREIT MICHAEL

103 AFTERSHOCK
Institutions, Infrastructures, and Innovation
PAUL N. EDWARDS AND JOHN LESLIE KING

COLUMNS

16 SPOTLIGHT ON TRANSACTIONS
Can Artificial Intelligence Detect Good (or Bad) Chemistry Between People?
ELISABETH ANDRÉ

21 SO & 25 YEARS AGO
ERICH NEUHOLD

26 EIC’S MESSAGE
Scarcity
JEFFREY VOAS AND NIR KSHETRI

29 VIRTUAL ROUNDTABLE
The Application of Formal Methods to Real-World Cryptographic Algorithms, Protocols, and Systems
NICKY MOUHA AND ASMAA HAILANE

81 BODY OF KNOWLEDGE
Where Do We Learn to Behave Like Grownups?
DAVID ALAN GRIER

84 CYBER-PHYSICAL SYSTEMS
Edge Artificial Intelligence Chips for the Cyberphysical Systems Era
HIROSHI FUKETA AND KUNIO UCHIYAMA

89 CYBERTRUST
Improving the Trustworthiness of Software Through Rigorous Data Type Design
RICHARD D. RIEHE AND JAMES BREIT MICHAEL

96 SOFTWARE ENGINEERING
AI Ethics: A Long History and a Recent Burst of Attention
JASON BORENSTEIN, FRANCES S. GRODZINSKY, AYANNA HOWARD, KEITH W. MILLER, AND MARTY J. WOLF

103 AFTERSHOCK
Institutions, Infrastructures, and Innovation
PAUL N. EDWARDS AND JOHN LESLIE KING

Membership News

4 PRESIDENT’S PROFILE 2021
Driving Innovation and Removing Barriers: Forrest Shull Takes the Helm as 2021 IEEE Computer Society President
FORREST SHULL AND MEGHA BEN

103 AFTERSHOCK
Institutions, Infrastructures, and Innovation
PAUL N. EDWARDS AND JOHN LESLIE KING

Departments

18 Elsewhere in the CS
110 Erratum