

ACM

Computing Surveys

- Article 1** (31 pages) A Survey on Power Management Techniques for Oversubscription of Multi-Tenant Data Centers
S. Malla and K. Christensen
- Article 2** (23 pages) Edge Cloud Offloading Algorithms: Issues, Methods, and Perspectives
J. Wang, J. Pan, F. Esposito, P. Calyam, Z. Yang, and P. Mohapatra
- Article 3** (36 pages) Code Authorship Attribution: Methods and Challenges
V. Kalgutkar, R. Kaur, H. Gonzalez, N. Stakhanova, and A. Matyukhina
- Article 4** (37 pages) A Survey on Graph Drawing Beyond Planarity
W. Didimo, G. Liotta, and F. Montecchiani
- Article 5** (38 pages) Deep Learning Based Recommender System: A Survey and New Perspectives
S. Zhang, L. Yao, A. Sun, and Y. Tay
- Article 6** (26 pages) Graph-Based Skill Acquisition For Reinforcement Learning
M. R. F. Mendonça, A. Ziviani, and A. M. S. Barreto
- Article 7** (38 pages) Recent Advances in Transfer Learning for Cross-Dataset Visual Recognition: A Problem-Oriented Perspective
J. Zhang, W. Li, P. Ogunbona, and D. Xu
- Article 8** (27 pages) Brownout Approach for Adaptive Management of Resources and Applications in Cloud Computing Systems: A Taxonomy and Future Directions
M. Xu and R. Buyya

continued on back cover



Association for
Computing Machinery

Advancing Computing as a Science & Profession

- Article 9** (33 pages) Conceptual Representations for Computational Concept Creation
P. Xiao, H. Toivonen, O. Gross, A. Cardoso, J. Correia, P. Machado, P. Martins, H. G. Oliveira, R. Sharma, A. M. Pinto, A. Díaz, V. Francisco, P. Gervás, R. Hervás, C. León, J. Forth, M. Purver, G. A. Wiggins, D. Miljković, V. Podpečan, S. Pollak, J. Kralj, M. Žnidaršič, M. Bohanec, N. Lavrač, T. Urbančič, F. V. D. Velde, and S. Battersby
- Article 10** (43 pages) How Generative Adversarial Networks and Their Variants Work: An Overview
Y. Hong, U. Hwang, J. Yoo, and S. Yoon
- Article 11** (37 pages) Sustainable Offloading in Mobile Cloud Computing: Algorithmic Design and Implementation
A. Boukerche, S. Guan, and R. E. De Grande
- Article 12** (38 pages) An Exhaustive Survey on Security Concerns and Solutions at Different Components of Virtualization
R. Patil and C. Modi
- Article 13** (36 pages) A Survey on Bayesian Nonparametric Learning
J. Xuan, J. Lu, and G. Zhang
- Article 14** (35 pages) Probabilistic Worst-Case Timing Analysis: Taxonomy and Comprehensive Survey
F. J. Cazorla, L. Kosmidis, E. Mezzetti, C. Hernandez, J. Abella, and T. Vardanega
- Article 15** (37 pages) Modeling Information Retrieval by Formal Logic: A Survey
K. Abdulahhad, C. Berrut, J.-P. Chevallet, and G. Pasi
- Article 16** (31 pages) L_p Samplers and Their Applications: A Survey
G. Cormode, and H. Jowhari
- Article 17** (39 pages) Urban Computing Leveraging Location-Based Social Network Data: A Survey
T. H. Silva, A. C. Viana, F. Benevenuto, L. Villas, J. Salles, A. Loureiro, and D. Quercia
- Article 18** (36 pages) The Real-Time Linux Kernel: A Survey on PREEMPT_RT
F. Reghenzani, G. Massari, and W. Fornaciari
- Article 19** (37 pages) Trust Evaluation in Cross-Cloud Federation: Survey and Requirement Analysis
U. Ahmed, I. Raza, and S. A. Hussain
- Article 20** (32 pages) Survey on Brain-Computer Interface: An Emerging Computational Intelligence Paradigm
A. Bablani, D. R. Édla, D. Tripathi, and R. Cheruku
- Article 21** (35 pages) A Survey on Various Threats and Current State of Security in Android Platform
P. Bhat and K. Dutta
- Article 22** (33 pages) Identifying Top- k Nodes in Social Networks: A Survey
R. Bian, Y. S. Koh, G. Dobbie, and A. Divoli

ACM

Computing Surveys

- Article 23** (37 pages) Computer-aided Arrhythmia Diagnosis with Bio-signal Processing: A Survey of Trends and Techniques
S. M. P. Dinakarrao, A. Jantsch, and M. Shafique
- Article 24** (36 pages) Machine Learning for Smart Building Applications: Review and Taxonomy
D. Djenouri, R. Laidi, Y. Djenouri, and I. Balasingham
- Article 25** (37 pages) Computational Understanding of Visual Interestingness Beyond Semantics: Literature Survey and Analysis of Covariates
M. G. Constantin, M. Redi, G. Zen, and B. Ionescu
- Article 26** (38 pages) Quality Evaluation of Solution Sets in Multiobjective Optimisation: A Survey
M. Li and X. Yao
- Article 27** (38 pages) A Survey on Multithreading Alternatives for Soft Error Fault Tolerance
I. Oz and S. Arslan
- Article 28** (36 pages) Software-defined Networking-based DDoS Defense Mechanisms
R. Swami, M. Dave, and V. Ranga
- Article 29** (31 pages) Cooperative Heterogeneous Multi-Robot Systems: A Survey
Y. Rizk, M. Awad, and E. W. Tunstel

continued on back cover



Association for
Computing Machinery

Advancing Computing as a Science & Profession

- Article 30** (40 pages) Insight Into Insiders and IT: A Survey of Insider Threat Taxonomies, Analysis, Modeling, and Countermeasures
I. Homoliak, F. Toffalini, J. Guarnizo, Y. Elovici, and M. Ochoa
- Article 31** (34 pages) Passive Vision Region-Based Road Detection: A Literature Review
T. Rateke, K. A. Justen, V. F. Chiarella, A. C. Sobieranski, E. Comunello, and A. von Wangenheim
- Article 32** (39 pages) Negative Sequence Analysis: A Review
W. Wang and L. Cao
- Article 33** (34 pages) Gait-based Person Re-identification: A Survey
A. Nambiar, A. Bernardino, and J. C. Nascimento
- Article 34** (25 pages) Countermeasures against Worm Spreading: A New Challenge for Vehicular Networks
A. Boukerche and Q. Zhang
- Article 35** (36 pages) Indoor Positioning Based on Visible Light Communication: A Performance-based Survey of Real-world Prototypes
M. Afzalan and F. Jazizadeh
- Article 36** (37 pages) A Comprehensive Survey on Parallelization and Elasticity in Stream Processing
H. Röger and R. Mayer
- Article 37** (45 pages) A Multi-Vocal Review of Security Orchestration
C. Islam, M. Ali Babar, and S. Nepal
- Article 38** (35 pages) Anomaly Detection Methods for Categorical Data: A Review
A. Taha and Ali S. Hadi
- Article 39** (36 pages) A Survey on Modality Characteristics, Performance Evaluation Metrics, and Security for Traditional and Wearable Biometric Systems
A. Sundararajan, A. I. Sarwat, and A. Pons
- Article 40** (39 pages) Deep Neural Network Approximation for Custom Hardware: Where We've Been, Where We're Going
E. Wang, J. J. Davis, R. Zhao, H.-C. Ng, X. Niu, W. Luk, P. Y. K. Cheung, and G. A. Constantinides
- Article 41** (38 pages) Smart City System Design: A Comprehensive Study of the Application and Data Planes
H. Habibzadeh, C. Kaptan, T. Soyata, B. Kantarci, and A. Boukerche
- Article 42** (35 pages) A Survey of Chip-level Thermal Simulators
H. Sultan, A. Chauhan, and S. R. Sarangi
- Article 43** (44 pages) Handcrafted and Deep Trackers: Recent Visual Object Tracking Approaches and Trends
M. Fiaz, A. Mahmood, S. Javed, and S. K. Jung

ACM

Computing Surveys

- Article 44** (28 pages) Naming Content on the Network Layer: A Security Analysis of the Information-Centric Network Model
E. Mannes and C. Maziero
- Article 45** (36 pages) Text Analysis in Adversarial Settings: Does Deception Leave a Stylistic Trace?
T. Gröndahl and N. Asokan
- Article 46** (36 pages) WiFi Sensing with Channel State Information: A Survey
Y. Ma, G. Zhou, and S. Wang
- Article 47** (38 pages) A Survey on Collecting, Managing, and Analyzing Provenance from Scripts
J. F. Pimentel, J. Freire, L. Murta, and V. Braganholo
- Article 48** (41 pages) Comparison of Software Design Models: An Extended Systematic Mapping Study
L. J. Gonçalves, K. Farias, T. Cavalcante de Oliveira, and M. Scholl
- Article 49** (37 pages) From Hack to Elaborate Technique—A Survey on Binary Rewriting
M. Wenzl, G. Merzdovnik, J. Ullrich, and E. Weippl
- Article 50** (37 pages) Dance Interactive Learning Systems: A Study on Interaction Workflow and Teaching Approaches
K. El Raheb, M. Stergiou, A. Katifori, and Y. Ioannidis

continued on back cover



Association for
Computing Machinery

Advancing Computing as a Science & Profession

- Article 51** (34 pages) Security and Privacy on Blockchain
R. Zhang, R. Xue, and L. Liu
- Article 52** (29 pages) Evaluation of Hardware Data Prefetchers on Server Processors
M. Bakhshalipour, S. Tabaeiaghdaei, P. Lotfi-Kamran, and H. Sarbazi-Azad
- Article 53** (38 pages) Leveraging User-related Internet of Things for Continuous Authentication: A Survey
L. Gonzalez-Manzano, J. M. de Fuentes, and A. Ribagorda
- Article 54** (29 pages) A Survey on Big Multimedia Data Processing and Management in Smart Cities
M. Usman, M. A. Jan, X. He, and J. Chen
- Article 55** (38 pages) Multi-model Databases: A New Journey to Handle the Variety of Data
J. Lu and I. Holubová
- Article 56** (38 pages) A Survey of Timing Verification Techniques for Multi-Core Real-Time Systems
C. Maiza, H. Rihani, J. M. Rivas, J. Goossens, S. Altmeyer, and R. I. Davis
- Article 57** (32 pages) A Survey of Group Key Agreement Protocols with Constant Rounds
H. Xiong, Y. Wu, and Z. Lu
- Article 58** (29 pages) Mulsemmedia DIY: A Survey of Devices and a Tutorial for Building Your Own Mulsemmedia Environment
E. B. Saleme, A. Covaci, G. Mesfin, C. A. S. Santos, and G. Ghinea
- Article 59** (35 pages) Survey and Taxonomy of Volunteer Computing
T. M. Mengistu and D. Che
- Article 60** (36 pages) Privacy Analysis on Microblogging Online Social Networks: A Survey
S. Oukemeni, H. Rifà-Pous, and J. M. Marquès Puig
- Article 61** (24 pages) Infrastructure-Independent Indoor Localization and Navigation
S. Winter, M. Tomko, M. Vasardani, K.-F. Richter, K. Khoshelham, and M. Kalantari
- Article 62** (50 pages) Survey on Combinatorial Register Allocation and Instruction Scheduling
R. Castañeda Lozano and C. Schulte
- Article 63** (34 pages) Environmental Audio Scene and Sound Event Recognition for Autonomous Surveillance: A Survey and Comparative Studies
S. Chandrakala and S. L. Jayalakshmi
- Article 64** (35 pages) Indoor Localization Improved by Spatial Context—A Survey
F. Gu, X. Hu, M. Ramezani, D. Acharya, K. Khoshelham, S. Valaee, and J. Shang

ACM

Computing Surveys

- Article 87** (25 pages) Computational Mining of Social Media to Curb Terrorism
M. Almoqbel and S. Xu
- Article 88** (48 pages) Dynamic Malware Analysis in the Modern Era—A State of the Art Survey
O. Or-Meir, N. Nissim, Y. Elovici, and L. Rokach
- Article 89** (40 pages) Extraction and Analysis of Fictional Character Networks: A Survey
V. Labatut and X. Bost
- Article 90** (33 pages) A Survey on Mobility-Induced Service Migration in the Fog, Edge, and Related Computing Paradigms
Z. Rejiba, X. Masip-Bruin, and E. Marín-Tordera
- Article 91** (34 pages) Security Modeling of Autonomous Systems: A Survey
F. Jahan, W. Sun, Q. Niyaz, and M. Alam
- Article 92** (36 pages) A Survey on Food Computing
W. Min, S. Jiang, L. Liu, Y. Rui, and R. Jain
- Article 93** (42 pages) A Systematic Review on Cloud Testing
A. Bertolino, G. De Angelis, M. Gallego, B. García, F. Gortázar, F. Lonetti, and E. Marchetti
- Article 94** (39 pages) Machine Learning Methods for Reliable Resource Provisioning in Edge-Cloud Computing: A Survey
T. Le Duc, R. G. Leiva, P. Casari, and P.-O. Östberg

continued on back cover



Association for
Computing Machinery

Advancing Computing as a Science & Profession

- Article 95** (41 pages) Orchestrating Big Data Analysis Workflows in the Cloud: Research Challenges, Survey, and Future Directions
M. Barika, S. Garg, A. Y. Zomaya, L. Wang, A. Van Moorsel, and R. Ranjan
- Article 96** (30 pages) Automated Expertise Retrieval: A Taxonomy-Based Survey and Open Issues
R. Gonçalves and C. F. Dorneles
- Article 97** (37 pages) Resource Management in Fog/Edge Computing: A Survey on Architectures, Infrastructure, and Algorithms
C.-H. Hong and B. Varghese
- Article 98** (30 pages) DNA Sequencing Technologies: Sequencing Data Protocols and Bioinformatics Tools
K.-C. Wong, J. Zhang, S. Yan, X. Li, Q. Lin, S. Kwong, and C. Liang
- Article 99** (36 pages) Big Data Analytics for Large-scale Wireless Networks: Challenges and Opportunities
H.-N. Dai, R. Chi-Wing Wong, H. Wang, Z. Zheng, and A. V. Vasilakos
- Article 100** (41 pages) Formal Specification and Verification of Autonomous Robotic Systems: A Survey
M. Luckcuck, M. Farrell, L. A. Dennis, C. Dixon, and M. Fisher
- Article 101** (34 pages) A Survey of Tool-supported Assurance Case Assessment Techniques
M. Maksimov, S. Kokaly, and M. Chechik
- Article 102** (38 pages) Adaptive Biometric Systems: Review and Perspectives
P. H. Pisani, A. Mhenni, R. Giot, E. Cherrier, N. Poh, A. C. P. L. F. de Carvalho, C. Rosenberger, and N. E. B. Amara
- Article 103** (40 pages) Large-scale Semantic Integration of Linked Data: A Survey
M. Mountantonakis and Y. Tzitzikas
- Article 104** (62 pages) A Comprehensive Survey on Cloud Data Mining (CDM) Frameworks and Algorithms
H. B. Barua and K. C. Mondal
- Article 105** (33 pages) Autonomous UAV Cinematography: A Tutorial and a Formalized Shot-Type Taxonomy
I. Mademlis, N. Nikolaidis, A. Tefas, I. Pitas, T. Wagner, and A. Messina
- Article 106** (38 pages) Video Skimming: Taxonomy and Comprehensive Survey
Vivekraj V. K., D. Sen, and B. Raman
- Article 107** (34 pages) How Complex Is Your Classification Problem?: A Survey on Measuring Classification Complexity
A. C. Lorena, L. P. F. Garcia, J. Lehmann, M. C. P. Souto, and T. K. Ho

ACM Computing Surveys

- Article 108** (36 pages) Cloud Pricing Models: Taxonomy, Survey, and Interdisciplinary Challenges
C. Wu, R. Buyya, and K. Ramamohanarao
- Article 109** (36 pages) Document Layout Analysis: A Comprehensive Survey
G. M. Binmakhshen and S. A. Mahmoud
- Article 110** (37 pages) Security and Privacy Approaches in Mixed Reality: A Literature Survey
J. A. de Guzman, K. Thilakarathna, and A. Seneviratne
- Article 111** (28 pages) A Survey on Representation Learning Efforts in Cybersecurity Domain
M. Usman, M. A. Jan, X. He, and J. Chen
- Article 112** (42 pages) Academic Plagiarism Detection: A Systematic Literature Review
T. Foltýnek, N. Meuschke, and B. Gipp
- Article 113** (39 pages) A Survey of Metaprogramming Languages
Y. Lilis and A. Savidis
- Article 114** (20 pages) Seeing the Invisible: Survey of Video Motion Magnification and Small Motion Analysis
A. C. Le Ngo and R. C.-W. Phan
- Article 115** (37 pages) Video Description: A Survey of Methods, Datasets, and Evaluation Metrics
N. Aafaq, A. Mian, W. Liu, S. Z. Gilani, and M. Shah

continued on back cover



Association for
Computing Machinery

Advancing Computing as a Science & Profession

- Article 116** (29 pages) Survey of Compressed Domain Video Summarization Techniques
M. Basavarajaiah and P. Sharma
- Article 117** (36 pages) New Opportunities for Integrated Formal Methods
M. Gleirscher, S. Foster, and J. Woodcock
- Article 118** (39 pages) A Survey of Coarse-Grained Reconfigurable Architecture and Design: Taxonomy, Challenges, and Applications
L. Liu, J. Zhu, Z. Li, Y. Lu, Y. Deng, J. Han, S. Yin, and S. Wei
- Article 119** (23 pages) Survey of Text-based Epidemic Intelligence: A Computational Linguistics Perspective
A. Joshi, S. Karimi, R. Sparks, C. Paris, and C. R. Macintyre
- Article 120** (34 pages) Applications of Distributed Ledger Technologies to the Internet of Things: A Survey
Q. Zhu, S. W. Loke, R. Trujillo-Rasua, F. Jiang, and Y. Xiang
- Article 121** (28 pages) A Comprehensive Review of the Fireworks Algorithm
J. Li and Y. Tan
- Article 122** (40 pages) A Survey on Interdependent Privacy
M. Humbert, B. Trubert, and K. Huguenin
- Article 123** (32 pages) Model-driven Game Development: A Literature Review
M. Zhu and A. I. Wang
- Article 124** (38 pages) A Systematic Survey on Cloud Forensics Challenges, Solutions, and Future Directions
B. Manral, G. Somani, K.-K. R. Choo, M. Conti, and M. S. Gaur
- Article 125** (36 pages) A Survey on End-Edge-Cloud Orchestrated Network Computing Paradigms: Transparent Computing, Mobile Edge Computing, Fog Computing, and Cloudlet
J. Ren, D. Zhang, S. He, and Y. Zhang
- Article 126** (28 pages) Malware Dynamic Analysis Evasion Techniques: A Survey
A. Afnian, S. Niksefat, B. Sadeghiyan, and D. Baptiste
- Article 127** (35 pages) A Survey of DevOps Concepts and Challenges
L. Leite, C. Rocha, F. Kon, D. Milojevic, and P. Meirelles
- Article 128** (35 pages) A Survey of Intrusion Detection Systems Leveraging Host Data
R. A. Bridges, T. R. Glass-Vanderlan, M. D. Iannacone, M. S. Vincent, and Q. (Guenevere) Chen
- Article 129** (34 pages) A Systematic Review on Literature-based Discovery: General Overview, Methodology, & Statistical Analysis
M. Thilakarathne, K. Falkner, and T. Atapattu
- Article 130** (28 pages) How Smart Are Smart Classrooms? A Review of Smart Classroom Technologies
M. K. Saini and N. Goel
- Article 131** (36 pages) Random Graph Modeling: A Survey of the Concepts
M. Drobysheskiy and D. Turdakov