Special Focus on Deep Learning for Computer Vision (2021)

Guest Editors: Xiang BAI, Yanwei PANG, Guofeng ZHANG

Triple discriminator generative adversarial network for zero-shot image classification
Zhong JI, Jiangtao YAN, Qiang WANG, Yanwei PANG & Xuelong LI
Sci China Inf Sci, 2021, 64(2): 120101

Learning efficient text-to-image synthesis via interstage cross-sample similarity distillation
Fengling MAO, Bingpeng MA, Hong CHANG, Shiguang SHAN & Xilin CHEN
Sci China Inf Sci, 2021, 64(2): 120102

PSC-Net: learning part spatial co-occurrence for occluded pedestrian detection
Jin XIE, Yanwei PANG, Hisham CHOLAKKAL, Rao ANWER, Fahad KHAN & Ling SHAO
Sci China Inf Sci, 2021, 64(2): 120103

Task-wise attention guided part complementary learning for few-shot image classification
Gong CHENG, Ruimin LI, Chunbo LANG & Junwei HAN
Sci China Inf Sci, 2021, 64(2): 120104

Learning generalizable deep feature using triplet-batch-center loss for person re-identification
Bin HU, Jiwei XU & Xinggang WANG
Sci China Inf Sci, 2021, 64(2): 120111

Special Focus on Weakly Supervised Learning

Guest Editors: Min-Ling ZHANG, Yu-Feng LI

Learning from group supervision: the impact of supervision deficiency on multi-label learning
Miao XU & Lan-Zhe GUO
Sci China Inf Sci, 2021, 64(3): 130101

Deep multiple instance selection
Xin-Chun LI, De-Chuan ZHAN, Jia-Qi YANG & Yi SHI
Sci China Inf Sci, 2021, 64(3): 130102

Few-shot text classification by leveraging bi-directional attention and cross-class knowledge
Ning PANG, Xiang ZHAO, Wei WANG, Weidong XIAO & Deke GUO
Sci China Inf Sci, 2021, 64(3): 130103

Crowdsourcing aggregation with deep Bayesian learning
Shao-Yuan LI, Sheng-Jun HUANG & Songcan CHEN
Sci China Inf Sci, 2021, 64(3): 130104

Deep graph cut network for weakly-supervised semantic segmentation
Jiapei FENG, Xinggang WANG & Wenyu LIU
Sci China Inf Sci, 2021, 64(3): 130105
Special Focus on Constraints and Optimization in Artificial Intelligence

Guest Editors: Shaowei CAI, Fred W. GLOVER, Minghao YIN, Jian GAO

Focal distance tabu search
Fred GLOVER & Zhipeng LU
Sci China Inf Sci, 2021, 64(5): 150101

Learning dynamics of gradient descent optimization in deep neural networks
Wei WU, Xiaoyuan JING, Wencai DU & Guoliang CHEN
Sci China Inf Sci, 2021, 64(5): 150102

On the robustness of median sampling in noisy evolutionary optimization
Chao BIAN, Chao QIAN, Yang YU & Ke TANG
Sci China Inf Sci, 2021, 64(5): 150103

An approximation algorithm for k-median with priorities
Zhen ZHANG, Qilong FENG, Jinhui XU & Jianxin WANG
Sci China Inf Sci, 2021, 64(5): 150104

Solving diversified top-k weight clique search problem
Junping ZHOU, Chumin LI, Yupeng ZHOU, Mingyang LI, Lili LIANG & Jianan WANG
Sci China Inf Sci, 2021, 64(5): 150105

Special Focus on Visual Computing with Machine Learning

Guest Editors: Kun ZHOU, Xin TONG

Single-view facial reflectance inference with a differentiable renderer
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Sci China Inf Sci, 2021, 64(11): 210101

Dual attention autoencoder for all-weather outdoor lighting estimation
Piaopiao YU, Jie GUO, Longhai WU, Cheng ZHOU, Mengtian LI, Chenchen WANG & Yanwen GUO
Sci China Inf Sci, 2021, 64(11): 210102

Weakly supervised 2D human pose transfer
Qian ZHENG, Yajie LIU, Zhizhao LIN, Dani LISCHINSKI, Daniel COHEN-OR & Hui HUANG
Sci China Inf Sci, 2021, 64(11): 210103

iHairRecolorer: deep image-to-video hair color transfer
Keyu WU, Lingchen YANG, Hongbo FU & Youyi ZHENG
Sci China Inf Sci, 2021, 64(11): 210104

Hausdorff point convolution with geometric priors
Liqiang LIN, Pengdi HUANG, Fuyou XUE, Kai XU, Daniel COHEN-OR & Hui HUANG
Sci China Inf Sci, 2021, 64(11): 210105

Special Focus on Deep Learning for Computer Vision (2022)

Guest Editors: Xiang BAI, Yanwei PANG, Guofeng ZHANG, Wangmeng ZUO

Onfocus detection: identifying individual-camera eye contact from unconstrained images
Dingwen ZHANG, Bo WANG, Gerong WANG, Qiang ZHANG, Jiajia ZHANG, Jungong HAN & Zheng
YOU
Sci China Inf Sci, 2022, 65(6): 160101

**HAPNet: a head-aware pedestrian detection network associated with the affinity field**
Jiali DING, Tie LIU, Yun ZHAO, Zejian YUAN & Yuanyuan SHANG
Sci China Inf Sci, 2022, 65(6): 160102

**Progressive learning with multi-scale attention network for cross-domain vehicle re-identification**
Yang WANG, Jinjia PENG, Huibing WANG & Meng WANG
Sci China Inf Sci, 2022, 65(6): 160103

**TransCrowd: weakly-supervised crowd counting with transformers**
Dingkang LIANG, Xiwu CHEN, Wei XU, Yu ZHOU & Xiang BAI
Sci China Inf Sci, 2022, 65(6): 160104

**Prototype-based classifier learning for long-tailed visual recognition**
Xiu-Shen WEI, Shu-Lin XU, Hao CHEN, Liang XIAO & Yuxin PENG
Sci China Inf Sci, 2022, 65(6): 160105

**Comprehensive benchmark datasets for Amharic scene text detection and recognition**
Wondimu DIKUBAB, Dingkang LIANG, Minghui LIAO & Xiang BAI
Sci China Inf Sci, 2022, 65(6): 160106

**RLLNet: a lightweight remaking learning network for saliency redetection on RGB-D images**
Wujie ZHOU, Chang LIU, Jingsheng LEI & Lu YU
Sci China Inf Sci, 2022, 65(6): 160107

**Human-object interaction detection via interactive visual-semantic graph learning**
Tongtong WU, Fuqing DUAN, Liang CHANG & Ke LU
Sci China Inf Sci, 2022, 65(6): 160108

**Few-shot font style transfer with multiple style encoders**
Kejun ZHANG, Rui ZHANG, Yonglin WU, Yifei LI, Yonggen LING, Bolin WANG, Lingyun SUN & Yingming LI
Sci China Inf Sci, 2022, 65(6): 160109

**Keywords:** class-incremental learning; lifelong learning; continual learning; Learnware; open environment; catastrophic forgetting; model reuse

**Keywords:** CNN; dropout; optimization method; network design; Newton's method

**Keywords:** deep learning; point cloud registration; rotation invariant; computer vision
Keywords: unsupervised feature selection; graph fusion; feature weight learning; local structure preservation

Keywords: optimizer; control model; phase trajectory; parameter adjustment; classification; dynamic performance

Sun H, Li M. **Enhancing unsupervised domain adaptation by exploiting the conceptual consistency of multiple self-supervised tasks.** Sci China Inf Sci, 2023, 66(4): 142101
Keywords: deep learning; transfer learning; domain adaptation; domain shift; self-supervised

Li T, Ma J W. **A variational hardcut EM algorithm for the mixtures of Gaussian processes.** Sci China Inf Sci, 2023, 66(3): 139103
Keywords: Gaussian processes; EM algorithm; variational inference; mixture model; nonparametric Bayesian

Keywords: neural network equivalent model; non-smooth convex optimization; generalization error; massive data classification; ADMM

Keywords: transfer learning; convergence analysis; non-negative matrix factorization; multiplicative update algorithm; optimization

Yang W J, Li C Q, Jiang L X. **Learning from crowds with robust support vector machines.** Sci China Inf Sci, 2023, 66(3): 132103
Keywords: vector machines crowdsourcing learning; ground truth inference; integrated labels; label noise; robust support

Keywords: abductive learning; subconcept learning; logical reasoning; subconcept set selection; meta-interpretive learning

Keywords: distributed learning system; federated learning; continual learning; model compression; error compensation
Keywords: artificial intelligence; symbolism; connectionism; dual-space model; single-space model; triple-space model

Keywords: prediction system; phase space reconstruction; topological equivalence; dynamical feed-forward neural network; integer constrained particle swarm optimization algorithm

Keywords: network compression; network acceleration; filter pruning; knowledge transferred learning; knowledge distillation

Keywords: naive Bayes; attribute augmentation; attribute weighting; attribute conditional independence; classification

Keywords: positive and unlabeled learning; model selection; automated machine learning

Keywords: Derivative-free optimization; Hyper-parameter optimization; Non-convex optimization; Distributed optimization; Software

Keywords: online learning; strongly adaptive; changing environments; weighing method; regret bound

Keywords: metric learning; Riemannian metric; curvature; flow learning; manifold learning

Keywords: unlabeled-data driven; 1/2 regularization; cost-sensitive; inverse projection; sparse representation-based classification

Keywords: unsupervised manifold alignment; relaxed integer programming; Frank Wolfe algorithm

Keywords: aspect term extraction; recurrent neural network; self-attention; densely-connected network; double word embeddings; aspect-based sentiment analysis; deep learning; sequence labeling

Keywords: artificial intelligence; health monitoring; data visualization; data analysis; athletics

Keywords: incompleteness; multi-view clustering; local clustering; global clustering; co-regularization

Keywords: graph; convolutional networks; global information; fusion; node classification

Keywords: example-guided; style; response generation; low-resource; zero-shot

Keywords: book thickness; vertex cover number; linear order; 1-page embedding graph; kernel

Keywords: submodular maximization; streaming model; two-stage; threshold technique; approximation algorithms

Keywords: approximation algorithm; k-median; lower-bounded k-median

Keywords: geometric deep learning; manifold deep learning; cnn; graph convolutional neural networks; high-dimensional information
Keywords: coordinating participation routes, informative participatory sensing, incentive mechanism, computationally efficient

Li Y J. Accelerated value iteration via Anderson mixing. Sci China Inf Sci, 2021, 64(12): 222105
Keywords: reinforcement learning; q-learning; value iteration; anderson acceleration; deep neural networks

Keywords: text classification; dual-axial self-attention; feature-axial dependency

Keywords: ensemble learning; adaboost; clustering; misclassification degree; transaction fraud detection

Keywords: topic model; deep learning; stack overflow; question and answer

Keywords: learning dynamics; kernel-based convolution; manifolds; control model; network stability

Li T, Dou Y. Representation learning on textual network with personalized PageRank. Sci China Inf Sci, 2021, 64(11): 212102
Keywords: representation learning; network embedding; pagerank; textual network; personalized pagerank

Ma D, Chen S C. Semi-blind compressed sensing via adaptive dictionary learning and one-pass online extension. Sci China Inf Sci, 2021, 64(9): 199101
Keywords: compressed sensing; blind compressed sensing; semi-blind compressed sensing; adaptive dictionary learning; incremental learning

Keywords: local feature selection; label-specific feature; semi-supervised learning; data classification; discriminative feature

Keywords: air pollution prediction; artificial intelligence; convolutional neural network
Keywords: architecture transfer; neural architecture search; evolutionary algorithm; large-scale dataset

Keywords: spatial crowdsourcing; online bottleneck matching; competitive ratio analysis; task assignment; online bipartite matching

Keywords: interactive cognition; evolution growth; wheeled robots; prior knowledge; driving skills

Keywords: text generation; deep learning; graph neural network; dependency parsing

Keywords: differential identifiability; differential privacy; k-means; k-prototypes; big data

Keywords: time series; multi-domain; representation; anomaly detection; data mining

Keywords: encoder-decoder; multi-scale; attention; handwritten mathematical expression recognition; attention recurrent neural network; dense network

Zhao S-Y, Xie Y-P, Li W-J. **On the convergence and improvement of stochastic normalized gradient descent.** Sci China Inf Sci, 2021, 64(3): 132103
Keywords: non-convex problems; stochastic normalized gradient descent; computation complexity

Keywords: semantic segmentation; weakly-supervised learning; semi-supervised learning; graph cut

Li S-Y, Huang S-J, Chen S C. **Crowdsourcing aggregation with deep Bayesian learning.** Sci China Inf Sci, 2021, 64(3): 130104
Keywords: crowdsourcing; classification; fully bayesian deep generative models; natural gradient;
stochastic variational inference

Keywords: text classification; meta-learning; few-shot learning; bi-directional attention; cross-class knowledge

Keywords: multiple instance learning; instance selection; gumbel softmax; variance normalization; hard attention

Xu M, Guo L-Z. **Learning from group supervision: the impact of supervision deficiency on multi-label learning.** Sci China Inf Sci, 2021, 64(3): 130101
Keywords: multi-label learning; weakly supervised learning; weakly supervised multi-label learning; query strategy; group supervision

Keywords: convolutional neural networks; cnns; reduced geometric algebra; rga; multivectors; learning algorithm; multi-dimensional data

Keywords: compressed sensing; low rank tensor recovery; tensor restricted isometry property; machine learning; tensor sparsity

Keywords: deep neural networks; perspective; ai; over-parameterization; machine learning

**生物信息**

Lei X J, Zhang W X. **Logistic regression algorithm to identify candidate disease genes based on reliable protein-protein interaction network.** Sci China Inf Sci, 2021, 64(7): 179101
Keywords: disease genes; logistic regression algorithm; multiple biological data; topological similarity of heterogeneous network; reconstructed ppi network

Keywords: respiratory depression detection; breath sound; hilbert spectrum; time-energy dual scale normalization; svm

**图形图像**

Keywords: saliency detection; convolutional neural network; regional feature mapping; co-saliency detection; deep learning


Keywords: vision transformer; structural pruning; image classification; object detection; language modeling

Wang W, Dong Q L, Hu Z Y. **ASPPR: active single-image piecewise planar 3D reconstruction based on geometric priors.** Sci China Inf Sci, 2023, 66(7): 174101

Keywords: single-image reconstruction; geometric prior; user interaction; multi-plane optimization; convolutional neural network


Keywords: point cloud registration; cross-modal feature fusion; multi-view feature fusion; computer vision; deep learning


Keywords: person re-identification; noise label; camera variation; clustering; deep learning


Keywords: survey; generative adversarial networks; pre-trained models; image editing; image restoration


Keywords: multimodal brain imaging correlation; sparse multiview canonical correlation analysis; task imbalance; adaptive loss balancing; graph-group penalty


Keywords: semantic segmentation; context modeling; long-range dependencies; attention mechanism


Keywords: fine-grained image recognition; transformer; hierarchical concept embedding; adaptive
sampling; Siamese network

Keywords: lighting; graph learning; augmented reality; spherical Gaussians; rendering

Keywords: visual attention; class-specific attention encoding; class attention network; dictionary learning

Keywords: intrinsic image decomposition; detail-preserving; reflectance edges

Keywords: breast tumor; ultrasound image segmentation; deep neural network; difficulty-awareness

Keywords: deep learning; remote sensing images; super-resolution; unpaired training; weak supervision

Keywords: Chinese ink wash painting; image style transfer; image-to-image translation; generative adversarial networks; GAN; bilateral-generator

Keywords: RGB-T tracking; cross-modal interaction; pixel-level correlation; relation-level correlation; visual object tracking

Keywords: small object detection; lightweight network; generic object detection; Tiny AI; high resolution

Keywords: image co-segmentation; pyramid features; deep learning; pair-wise manner; VGG16

Keywords: position-based dynamics; deformable solids; continuum mechanics


Keywords: point convolution; feature enhancement; attention point; deep neural network


Keywords: 3D stitching; video model; multiple video visualization; augmented virtual environment


Keywords: robotic grasp detection; multi-object scene; object detection; grasp matching strategy; deep learning


Keywords: image captioning; hybrid attention; contextual attention


Keywords: keypoint detection; convolutional neural network; image matching; self-supervised learning; repeatable


Keywords: reconstructing fluids; editing fluids; monocular videos; adaptive multilayer external force guiding model; generation and extinction model

Wei X-S, Cui Q, Yang L, et al. **RPC: a large-scale and fine-grained retail product checkout dataset.** Sci China Inf Sci, 2022, 65(9): 197101

Keywords: Automatic Check-Out; Benchmark Datasets; Retail Product Recognition; Fine-Grained Recognition; Deep Learning


Keywords: anomaly detection; dual-encoder single-decoder network; reverse erasure; compact feature representation; deep support vector data description

Keywords: point cloud; semantic segmentation; self-attention mechanism; deep learning; long-range dependencies

Huang J, Li X L. Ensemble of half-space trees for hyperspectral anomaly detection. Sci China Inf Sci, 2022, 65(9): 192103
Keywords: hyperspectral image; anomaly detection; extended morphological attribute profile; mass estimation; half-space tree

Keywords: ultrasound image; axillary lymph nodes segmentation; difficulty-aware segmentation; graph with spatial attention

Keywords: video coding; AVS standards; video applications; intelligent coding

Keywords: 3d modeling; indoor scene synthesis; layout programming; indoor navigation; deep reinforcement learning

Keywords: video object segmentation; few-shot; target-aware; meta knowledge; bilevel-optimization

Keywords: salient object detection; top-down flow; densely nested framework; convolutional neural networks

Keywords: video inpainting; patch-based searching; optical flow; neural network; refinement

Keywords: cross-modal retrieval; graph reasoning; memory network; visual semantic embedding; image-text retrieval; video-text retrieval

Keywords: font generation; image-to-image translation; generative adversarial network; multi-task
learning; font fusion; style transfer

Keywords: human-object interaction; context modeling; graph learning; interactive graph; visual-semantic graph

Keywords: deep learning; rgb-d image; saliency detection; remaking learning; lightweight network

Keywords: Amharic script; scene text; text detection; text recognition; Amharic text

Keywords: long-tailed distribution; categorical prototype; classifier generation; classifier calibration; class imbalance

Keywords: crowd counting; visual transformer; weakly supervised; crowd analysis; transformer

Keywords: data adaptation module; weighted label smoothing loss; multi-scale attention network; vehicle re-identification

Keywords: pedestrian detection; head detection; head-aware pedestrian network; affinity module; occlusion

Keywords: onfocus detection; deep neural network; capsule routing; computer vision; deep learning

Keywords: hyperspectral; reconstruction; convolutional neural network; deep learning

Keywords: rgbt tracking; multi-modal; reliability guideline; feature configuration; correlation filter

Keywords: efficiency; machine learning; real-time systems; segmentation; light-weight

Keywords: video pose estimation; self-adjustable hyper-graph; spatial-temporal subspace exploration; maximum matching subspace operator; action pattern

Keywords: neural network; automatic image matting; image fusion; deep learning; gradient domain

Keywords: adaptive template; incremental network quantization; optimization; cnn; memristor

Keywords: computer vision; human motion segmentation; spectral clustering; structure constraint; matrix factorization

Keywords: bin packing problem; online 3d-bpp; reinforcement learning

Keywords: ranking network; urban perception; attribute learning; attention network; colour and texture

Keywords: rain removal; maximum a posterior estimation; deep learning; generalization performance; comprehensive repository

Keywords: point convolution; hausdorff distance; geometric prior; deep neural network

Keywords: hair color transfer; video manipulation; luminance map; cycle consistency

Keywords: pose transfer; weak supervision; human skeleton

Keywords: outdoor illumination; adaptive feature pyramid; attention; autoencoder; augmented reality

Keywords: facial modeling; reflectance inference; differentiable renderer

Keywords: interaction; 3d menu; freehand gesture; selection technology; 3d rotation

Keywords: few-shot learning; image recognition; feature matching; self-attention

Keywords: vehicle re-identification; spatial structural similarity; triplet loss; deep learning; video surveillance system

Keywords: autism spectrum disorder; mixed reality; cognitive training; young asd children; user study; quantitative research

Keywords: augmented reality; neural networks; differentiable renderer; reflection; shadow

Keywords: person re-identification; triplet loss; triplet-batch-center loss; metric learning; deep learning

Keywords: few-shot learning; meta-learning; task-wise attention; part complementary learning

Keywords: pedestrian detection; graph convolutional network; occlusion; object detection; feature extraction

Keywords: generative adversarial network; text-to-image synthesis; knowledge distillation

Keywords: zero-shot classification; generative adversarial nets; text reconstruction; sharma-mittal entropy

Keywords: improved kernels for triangle packing in tournaments

Keywords: tournaments; triangle packing; kernelization; fixed-parameter tractable; graph algorithms

Song B S, Li K L, Zeng X X, et al. **Monodirectional evolutional symport tissue P systems with channel states and cell division.** Sci China Inf Sci, 2023, 66(3): 139104
Keywords: Bio-inspired computing; tissue P system; channel state; cell division; symport rule; antiport rule

Keywords: time-delay systems; delay differential equations; control barrier functionals; controllers; safety

Keywords: multi-strategy optimization algorithm; sequence quadratic program; nonlinear equation system; multimodal optimization; multiple swarms optimization algorithm

Keywords: shape formation; self-organization; artificial light field; multi-agent path planning; collective intelligence

Keywords: distributed algorithms; holistic aggregation function; random regular graph; congest model; communication complexity; round complexity

Keywords: cloud computing; load balancing; auto-scalable; proof-of-work; fault-tolerant

Keywords: distributed algorithms; weighted girth; congest model; communication complexity; round complex

Keywords: maximum internal spanning tree; incremental problem; approximation algorithm; competitive ratio

Keywords: encoding; independent set; maximal clique; partial maxsat; top-k

Keywords: clustering; k-median; approximation algorithm; lp relaxation; primal-dual

Keywords: evolutionary algorithms; noisy optimization; median sampling; computational complexity; runtime analysis

Keywords: learning dynamics; deep neural networks; gradient descent; control model; transfer function

Glover F, Lv Z P. **Focal distance tabu search.** Sci China Inf Sci, 2021, 64(5): 150101
Keywords: tabu search; diversification; strategic oscillation; adaptive partitioning; metaheuristics

Keywords: high-performance computing

Keywords: distributed training; deep learning; communication; sketch; quantization

Li H B, Zhao Y, Yao W B, et al. **Towards real-time ML-based DDoS detection via cost-efficient...**
**Window-based feature extraction.** Sci China Inf Sci, 2023, 66(5): 152105
Keywords: DDoS attack; machine learning; feature extraction; detection delay; cost-efficiency

Keywords: serverless computing; workflow scheduling; security; makespan; proactive Defense

Keywords: deep learning; distributed system; artificial intelligence; parallel computing; machine learning

Keywords: multi-tenancy; resource reliability; cloud computing; scheduling

Keywords: constrained minimum weighted bipartite assignment; multi-objective energy-aware radio broadcast scheduling; evolutionary algorithms; dynamic resource allocation; aggregate local search

Keywords: network-on-chip; 3-ary n-cube; topology mapping; wirelength; performance evaluation

Keywords: sunway; virtualization; hypervisor; light-weighted; virtual machines

Keywords: blockchain; distributed systems; internet of value; challenges; development

Keywords: reconfigurable computing; earthquake simulation; fpga; hardware-software co-design; architecture exploration

Keywords: journaling file systems; nvme ssd; microwrite merging; hash table; ceph
Keywords: wide area network file systems; multiple workloads; metadata prefetching; correlation-directed prefetching; directory-directed prefetching; self-tuning prefetching

Keywords: deep learning; performance; comparison; tensorflow; pytorch

Keywords: hypervisor; virtual machine; non-volatile memory; hybrid memory management

Keywords: supercomputer; exascale; sunway; scalability; power consumption; data movement; programming; availability

Keywords: blockchain; consensus algorithm; byzantine fault-tolerant; process model; design principles

**信息安全**

Keywords: autonomous path proxy re-encryption; proxy re-encryption; lattice-based cryptography; learning with errors; controlled delegation

Ghopur D, Ma J F, Ma X D, et al. **Puncturable ciphertext-policy attribute-based encryption scheme for efficient and flexible user revocation.** Sci China Inf Sci, 2023, 66(7): 172104
Keywords: ciphertext-policy attribute-based encryption; puncturable encryption; user revocation; outsource decryption; digital signature

Keywords: SDN security; DDoS attacks; resource management; queueing theory; QoS

Keywords: malware; unbreakable property; modeling mechanism; accurate identification; intention concealment

impossible differential cryptanalysis. Sci China Inf Sci, 2023, 66(3): 139106
Keywords: cybersecurity; cryptanalysis; lightweight block cipher; impossible differential cryptanalysis; Simeck

Keywords: key escrow; blockchain; smart contract; committee selection; anonymous authentication

Keywords: Blockchain channel; transaction transmission; channel balance; channel state; channel transmission probability; non-cooperative game

Keywords: preserving protocols local differential privacy; high-dimensional data synthesis; sampling; data privacy; privacy-

Keywords: visual analytics; visualization; evaluation; benchmark; intelligence analysis

Chen T, Cheng Q F, Li X H. An anonymous key agreement protocol with robust authentication for smart grid infrastructure. Sci China Inf Sci, 2022, 65(9): 199101
Keywords: smart grid infrastructure; impersonation attack; perfect forward security; ephemeral key compromise attack; key agreement

Keywords: group signature; hierarchical group signature; verifier-local revocation; generic construction; lattice-based cryptography

Keywords: intrusion prevention system; middlebox scaling; software-defined network; security; resource utilization

Keywords: malware analysis; cyber threat intelligence; crypto jacking; incident response; malware incident response

Keywords: network defense; adaptive defense; automated defense; programmable defense; security services; software-defined networking; security management

Keywords: side channel analysis; dpa; threshold implementation; domain-oriented masking; aes

Keywords: trapdoor sampler; ntru lattice; hash-and-sign; lattice-based signature; post-quantum cryptography

Keywords: forward security; backward security; multi-keyword search; verification; searchable encryption

Keywords: post-quantum cryptography; pseudorandom generator; supersingular elliptic curve isogenies; decisional supersingular product; indistinguishability

Keywords: lattice cryptography; group encryptions; lattice trapdoors; accumulators; zero-knowledge

Keywords: data sharing; homomorphic encryption; blockchain; smart contract; game theory

Keywords: auction; commitment; integer comparison protocol; constant-round; blockchain

Keywords: division property; sbox; anf; divisional optimal; divisional suboptimal

Keywords: nonlinear invariant attack; 4-bit optimal s-boxes; q-equivalence; fides; distinguishing attack

Keywords: lightweight cryptosystem; gift; ciphertext-only fault analysis; cryptanalysis; fault analysis

Keywords: white-box cryptography; block cipher; design; addition/rotation/xor; efficiency improvement

Keywords: crytanalysis; lattice-based cryptography; learning with errors problem; primal attack; unique-svp

Keywords: tweakable block cipher; qarma; impossible differential; related tweakey; milp

Keywords: correlation leakage analysis; correlation leakage model; second-order analysis; side-channel attack; masking schemes

Keywords: finite groups of lie type; exponential mapping; public key encryption; non-abelian factoring assumption; non-abelian inserting assumption

Keywords: cube attack; division property; morus; gimli; authenticated encryption

Keywords: cloud computation security; digital signature; functional signature; non-interactive zero-knowledge proof; e-commerce

Keywords: local differential privacy; set intersection; union; randomized response; multiset
Keywords: rational secret sharing; game theory; sequential equilibrium; incentive-compatible; smart contract

Chen T, Li X H, Cheng Q F. An enhanced key exchange protocol exhibiting key compromise impersonation attacks resistance in mobile commerce environment. Sci China Inf Sci, 2021, 64(9): 199106
Keywords: three-party authentication; key exchange; key compromise impersonation attack; mobile-commerce environments; security analysis

Keywords: cryptanalysis; stream cipher; guess and determine attack; masha; k2

Keywords: security vulnerability; meltdown attack; system performance; cache attack; microarchitecture attack; side channel

Sun S Z, Zhang R, Ma H. Hashing multiple messages with SM3 on GPU platforms. Sci China Inf Sci, 2021, 64(9): 199103
Keywords: sm3; hash algorithm; parallel computation; gpu; high performance implementation

Keywords: searchable encryption; sgx technique; file injection attack; forward/toward privacy; cloud databases

Keywords: blind quantum computation; mutual identity authentication; load balancer; semi-trust ca; quantum network

Keywords: iot; cp-abe; constant-size ciphertexts; adaptively secure; privacy protection

Keywords: stp; differential trail; linear trail; gift-128; des; desl; iceberg; aria; sm4

China Inf Sci, 2021, 64(5): 159102
Keywords: side channel analysis; masking; threshold implementation; sm4; dpa

Keywords: fault attack; infective countermeasure; multiple infections; double-fault attack; fa-sca combined attack; random fault

Keywords: cloud computing; outsourced computation; histogram feature; image steganalysis; symmetric encryption

Keywords: discrete gaussian sampling; convolution theorem; lattice; error estimation; gaussian measure

Keywords: frit; duplex authenticated encryption mode; key-dependent cube attack; key-recovery; permutation-based cryptology

Keywords: symmetric cryptography; tweakable blockcipher; tweakable even-mansour cipher; multi-user security; tightness; birthday bound; beyond birthday bound

Keywords: impossible differential cryptanalysis; zero-correlation linear cryptanalysis; milp; automatic tool; block cipher

Keywords: remote sensing; image fusion; brovey; privacy preserving; cloud computing

Keywords: blockciphers; key schedule; key-alternating feistel; provable security; h-coefficient technique

Keywords: certificateless; designated verifier; proxy; digital signature; unmanned aerial vehicle

社会媒体

Keywords: database management system; performance optimization; performance prediction; anomaly diagnosis; database tuning

Keywords: recommendation systems; fairness; adversarial learning

Keywords: cognitive psychology; personality classification; multimodal analysis; multi-agent reinforcement learning; agent-sharing mechanism

Keywords: natural language generation; emotional chatbot; sequence-to-sequence; emotion distribution; emotion analysis

Keywords: recommendation system; collaborative filtering; social recommendation; social networks; generative model

Keywords: collaborative filtering; recommender system; implicit feedback; edge-edge similarity; line graph

Keywords: product review analysis; sentiment classification; interactive graph; graph convolutional network

Keywords: information aggregation; eigen centrality; text classification; natural language processing; deep learning

Keywords: network embedding; representation learning; random walk; entropy; weighted entropy

Keywords: hawkes process; multikernel function; stock market prediction; long-term news effects

Keywords: knowledge organization; knowledge forest; facet tree; knowledge fragment; learning dependency; information overload; learning disorientation

Keywords: moocs; concept extraction; question answering; course recommendation; video navigation

Keywords: name disambiguation; academic network; graph embedding; outlier detection; clustering algorithm

Software

Keywords: malicious behavior; Android document; knowledge graph; malware family variant; machine learning

Keywords: Deep Learning; Testing; Bug Fixing; Machine Translation; Image Classification; Numeric Bugs

Keywords: Mashup development; open API recommendation; deep learning; neural network; service discovery

Keywords: software-defined architecture; unmanned systems; MAPE-K; metamodel; resource management

Keywords: performance; software bloat; instant installation; mobile applications; program analysis

Keywords: system testing; random testing; concolic testing


Keywords: API recommendation; tensor factorization; context awareness; word embedding; software development intelligent


Keywords: Spark; memory; cache replacement; least partition weight; data-aware


Keywords: graph sampling; clustering structure; top-leader nodes; expansion strategies; large-scale graphs


Keywords: bidirectional transformation; system-model synchronization; change propagation; model-driven engineering; system edit


Keywords: regression testing; unit test generation; test oracles; program merges; merge conflicts


Keywords: empirical software engineering; software maintenance; software evolution; software architecture; software design


Keywords: working from home; developer productivity


Keywords: blockchain; dag; byzantine fault-tolerant; consensus algorithm; tee


Keywords: hybrid annotation framework; data annotation; expert knowledge; learning technique;
labeled dataset


Keywords: ubiquitous operating system; industrial internet of things; intelligent manufacturing; cps; hcps


Keywords: ontology matching; weak informative ontology; similarity propagation; semantic subgraph; ontology


Keywords: federated learning; programming abstraction; sgx; high-performance


Keywords: api specification; api directive; deep learning; text classification; imbalanced learning


Keywords: automaton learning; active learning; real-time automata


Keywords: system software; system security; linux container; arm; arm trustzone


Keywords: accepted pull request; prediction; code review; github; pull-based software development


Keywords: constraint satisfaction problem; arc consistency; forward checking; stronger consistency; weaker consistency


Keywords: code smells; change barrier; logical regression; machine learning; software development


Keywords: api misuses; api mining; ast differencing; change patterns; bug fixing

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Keywords: api documentation; android; online survey; stack overflow; empirical study