

目 次

评述

大模型时代的深度伪造检测	1
--------------------	---

彭春蕾, 李俊桦, 刘德成, 王楠楠, 胡瑞敏, 高新波

均值融合跟踪概念、理论与方法	23
----------------------	----

李天成, 李国冲, 李文硕, 胡程, 李浩

论文

开发运行一体的复杂关键软件系统演化	59
-------------------------	----

丁博, 王怀民, 米海波, 陈振邦, 付军, 张迅晖

面向方面级情感分析的渐进式跨域方法研究	76
---------------------------	----

秦涛, 周源坤, 王平辉, 管晓宏

面向二阶随机游走的高效核外图处理系统	91
--------------------------	----

郭渝洛, 陈子康, 张宇, 赵进, 王梓骁, 余辉, 廖小飞, 金海

考虑通信服务质量的 5G 基站与工业园区新型电力系统协同运行	108
--------------------------------------	-----

卢玮, 李远征, 李扬, 曾志刚

离散时间隐半马尔可夫切换奇异系统的稳定性分析与控制器设计	134
------------------------------------	-----

王豹, 朱全新

输入饱和和下二阶非线性多智能体系统鲁棒自适应固定时间分布式优化	148
---------------------------------------	-----

龚平, 王庆国, 李韬

基于动态异构冗余架构的信息物理系统隐私保护弹性控制	164
---------------------------------	-----

牛玉坤, 贺磊, 何川, 韩晓鹏, 曹植纲, 周鼎

一种新的多智能体分布式认知选频模型	185
-------------------------	-----

胡晨骏, 辜方林, 赵海涛, 刘杰, 熊俊, 任保全, 魏急波, 尹浩

智能超表面辅助无线供电通信网络的波束成型与资源分配方案	203
-----------------------------------	-----

郭漪, 郭颖欣, 刘刚, 付少忠

针对数字宽带接收机信号截获机制约束的低截获概率雷达波形设计方法	216
---------------------------------------	-----

彭润龙, 王福来, 崔畅, 祝迪, 李楠君, 王陶然, 庞晨, 李永祯, 王雪松

精选文章导读

基于深度学习的软件工程: 进展、挑战与机遇	237
-----------------------------	-----

陈湘萍, 胡星, 黄袁, 江贺, 计卫星, 姜艳杰, 蒋炎岩, 刘博, 刘辉, 李晓晨, 连小利, 孟国柱, 彭鑫,

孙海龙, 石琳, 王博, 王翀, 王加益, 王甜甜, 玄跻峰, 夏鑫, 杨已彪, 杨艺欣, 张莉, 周毓明, 张路

AI for VR: 虚拟现实中的人工智能	239
-----------------------------	-----

王莉莉, 许威威, 刘烨斌, 汪淼, 王贝贝, 杨旭波, 许岚, 谭张尧, 樊润泽, 王梓竣, 王驰, 张鸿文, 温怡健,

杨浩中, 吴健, 樊家辉, 王晖, 张启煊, 汪国平, 王涌天, 赵沁平

面向 6G 网络的 AI 与通信融合探析: 基础、挑战与未来研究机遇	241
--	-----

崔琪楣, 尤肖虎, 倪巍, 南国顺, 张雪菲, 张建华, 吕昕晨, 艾明, 陶小峰, 冯志勇, 张平, 武庆庆, 陶梅霞,

黄永明, 黄崇文, 刘光毅, 彭程晖, 潘志文, 孙韬, Dusit NIYATO, Tao CHEN, Muhammad Khurram KHAN,

Abbas JAMALIPOUR, Mohsen GUIZANI, Chau YUEN

刊讯

大规模智能体集群的平均场博弈与控制: 从理论到实践专题简介	243
-------------------------------------	-----

申铁龙

Content

REVIEW

Deepfake detection in the era of large models	1
Chunlei PENG, Junye LI, Decheng LIU, Nannan WANG, Ruimin HU & Xinbo GAO	
Concepts, theories and methods for average fusion tracking	23
Tiancheng LI, Guchong LI, Wenshuo LI, Cheng HU & Hao LI	

RESEARCH PAPER

Evolution of complex mission-critical software systems based on development and runtime cooperation	59
Bo DING, Huaimin WANG, Haibo MI, Zhenbang CHEN, Jun FU & Xunhui ZHANG	
Research on methods for progressive cross-domain aspect-based sentiment analysis	76
Tao QIN, Yuankun ZHOU, Pinghui WANG & Xiaohong GUAN	
An efficient out-of-core graph processing system for second-order random walks	91
Yuluo GUO, Zikang CHEN, Yu ZHANG, Jin ZHAO, Zixiao WANG, Hui YU, Xiaofei LIAO & Hai JIN	
Cooperative operation of 5G base stations and industrial park's novel power system considering communication quality of service	108
Wei LU, Yuanzheng LI, Yang LI & Zhigang ZENG	
The stability analysis and control design problems for a class of discrete-time hidden semi-Markov jump singular systems	134
Bao WANG & Quanxin ZHU	
Robust adaptive fixed-time distributed optimization for second-order nonlinear multi-agent systems under input saturation	148
Ping GONG, Qing-Guo WANG & Tao LI	
Privacy-preserving resilience control for cyber-physical systems based on the dynamic heterogeneous redundancy architecture	164
Yukun NIU, Lei HE, Chuan HE, Xiaopeng HAN, Zhigang CAO & Ding ZHOU	
A novel multi-agent distributed cognitive frequency-selection model	185
Chenjun HU, Fanglin GU, Haitao ZHAO, Jie LIU, Jun XIONG, Baoquan REN, Jibo WEI & Hao YIN	
Beamforming and resource allocation for reconfigurable intelligent surface assisted wireless powered communication network	203
Yi GUO, Yingxin GUO, Gang LIU & Shaozhong FU	
Design methods for LPI radar waveforms targeting constraints of signal interception mechanisms in digital wideband receivers	216
Runlong PENG, Fulai WANG, Chang CUI, Di ZHU, Nanjun LI, Taoran WANG, Chen PANG, Yongzhen LI & Xuesong WANG	

RESEARCH HIGHLIGHT

Deep learning-based software engineering: progress, challenges, and opportunities	237
Xiangping CHEN, Xing HU, Yuan HUANG, He JIANG, Weixing JI, Yanjie JIANG, Yanyan JIANG, Bo LIU, Hui LIU, Xiaochen LI, Xiaoli LIAN, Guozhu MENG, Xin PENG, Hailong SUN, Lin SHI, Bo WANG, Chong WANG, Jiayi WANG, Tiantian WANG, Jifeng XUAN, Xin XIA, Yibiao YANG, Yixin YANG, Li ZHANG, Yuming ZHOU & Lu ZHANG	
Artificial intelligence for virtual reality: a review	239
Lili WANG, Weiwei XU, Yebin LIU, Miao WANG, Beibei WANG, Xubo YANG, Lan XU, Zhangyao TAN, Runze FAN, Zijun WANG, Chi WANG, Hongwen ZHANG, Yijian WEN, Haozhong YANG, Jian WU, Jiahui FAN, Hui WANG, Qixuan ZHANG, Guoping WANG, Yongtian WANG & Qiping ZHAO	
Overview of AI and communication for 6G network: fundamentals, challenges, and future research opportunities	241
Qimei CUI, Xiaohu YOU, Wei NI, Guoshun NAN, Xuefei ZHANG, Jianhua ZHANG, Xinchun LU, Ming AI, Xiaofeng TAO, Zhiyong FENG, Ping ZHANG, Qingqing WU, Meixia TAO, Yongming HUANG, Chongwen HUANG, Guangyi LIU, Chenghui PENG, Zhiwen PAN, Tao SUN, Dusit NIYATO, Tao CHEN, Muhammad Khurram KHAN, Abbas JAMALIPOUR, Mohsen GUIZANI & Chau YUEN	

EDITORIAL NOTE

Special topic: mean-field game and control of large population systems: from theory to practice	243
Tielong SHEN	