

目次

· 机器视觉法桥梁表观病害识别与检测方法专栏 ·

基于机器视觉法的桥梁表观病害检测研究综述 刘宇飞,冯楚乔,陈伟乐,樊健生(1)

桥梁裂缝智能识别与监测方法研究 岳清瑞,徐刚,刘晓刚(16)

基于无人机的悬索桥主缆自动巡检及小样本表观病害识别 冯东明,余星宇,黎剑安,吴刚(29)

基于环带视觉扫描的墩柱结构表观病害攀爬检测作业机器人系统
..... 王会峰,杜浩,高荣,仝亚雄,彭璐,赵煜,黄鹤(40)

基于负压吸附爬壁机器人和 Transformer 的混凝土桥塔裂缝识别检测
..... 丁威,夏哲,舒江鹏,叶建龙,项贻强(53)

基于 Transformer 的高分辨率桥梁裂缝图像级联分割方法 褚鸿鹤,袁华青,龙砺芝,邓露(65)

基于改进 Segformer 的混凝土桥梁表观病害轻量级识别方法
..... 蒋仕新,唐椿程,杨建喜,李昊,熊元俊,李轲,刘新龙,王笛(77)

基于轻量化网络与迁移学习的桥梁水下桩墩结构表观病害轮廓提取
..... 王威,姜绍飞,宋华霖,李朋泽,王圣贤,苏振恒(88)

基于改进 Mask R-CNN 的钢桥多病害智能识别 彭卫兵,张明见,全柳萌,李珉,赵宇欣(100)

融合自适应光照预处理和深度学习的钢桥腐蚀检测方法 吴乐谋,张清华,郑秋松,邵少兵,崔闯(110)

钢结构工程高强度螺栓微小松动视觉检测方法研究 姚志东,陈志华,刘红波,卢佳祁(125)

融合机器视觉与区间仿射算法的桥梁结构影响线实测研究 周云,张路遥,胡锦涛,郝官旺(142)

融合加速度与计算机视觉实测车致响应的梁桥损伤识别方法
..... 吴桐,唐亮,周丰力,张玉丹,周志祥(152)

· 路面工程 ·

基于原子力显微技术的热再生混合料中新旧沥青融合程度量化指标和方法
..... 李明宸,刘黎萍,邢成炜,黄威棋(168)

氧化锌/膨胀蛭石复合材料组分协同增效延缓沥青老化行为研究 张恒龙,段海辉,罗尧(183)

· 路基工程 ·

基于 CPTU 测试的高速公路扩建地基软土参数空间变异性研究
..... 王才进,武猛,杨洋,何欢,蔡国军,刘薛宁,刘松玉(197)

刚性桩-半刚性桩-土工格栅增强路基承载及影响参数
..... 邓友生,李文杰,冯忠居,张克钦,李龙,姚志刚,肇慧玲(209)

· 交通工程 ·

智能网联卡车编队领航车驾驶人驾驶能力需求综述 伍毅平,赵子龙,倪鹏(219)

基于组合间距策略的自适应车辆队列纵向控制 李永福,王兴全,黄龙旺,黄鑫,胡晓松(239)

城市多模式交通大模型 MT-GPT:点线面的分层技术与应用场景
..... 周臻,顾子渊,曲小波,刘攀,刘志远(253)

快速路汇入区瓶颈交通流早发性失效研究(第2部分):致因分析 叶颖俊,孙剑(275)

· 汽车工程 ·

基于中低频阻抗谱的锂离子电池容量快速估计方法 孙丙香,庞俊峰,苏晓佳,付大伟,付智城(293)

基于信号权重分析的汽车耐久性用户关联模型优化求解方法
..... 杨永乐,董帅,王庆华,林伟雄,张志飞(304)

表征车辆实际行驶排放的行程动力学因子构造 张力,付明明,李阳,常虹,王锐,杨智焜(315)

CONTENTS

• Special Column on Identification and Detection Methods of Bridge Apparent Defects Based on Machine Vision Method •

Review of Bridge Apparent Defect Inspection Based on Machine Vision LIU Yu-fei, FENG Chu-qiao, CHEN Wei-le, FAN Jian-sheng(1)

Crack Intelligent Recognition and Bridge Monitoring Methods YUE Qing-rui, XU Gang, LIU Xiao-gang(16)

Automatic Inspection of Main Cables of Suspension Bridge Based on UAV and Apparent Defect Identification with Small-sized Samples FENG Dong-ming, YU Xing-yu, LI Jian-an, WU Gang(29)

A Climbing Detection Operation Robot System for Apparent Disease of Pier and Column Structures Based on Visual Scanning of Circular Belt WANG Hui-feng, DU Hao, GAO Rong, TONG Ya-xiong, PENG Lu, ZHAO Yu, HUANG He(40)

Recognition and Detection of Concrete Bridge Tower Cracks Using a Negative Pressure Adhesion Wall-climbing Robot and Transformer DING Wei, XIA Zhe, SHU Jiang-peng, YE Jian-long, XIANG Yi-qiang(53)

A Transformer-based Cascade Method for Segmenting Bridge Cracks from High-resolution Images CHU Hong-hu, YUAN Hua-qing, LONG Li-zhi, DENG Lu(65)

Lightweight Detection Method of Surface Damage on Concrete Bridges Based on Improved Segformer JIANG Shi-xin, TANG Chun-cheng, YANG Jian-xi, LI Hao, XIONG Yuan-jun, LI Ren, LIU Xin-long, WANG Di(77)

Extracting Surface Defect Contours of Bridge Underwater Pile-pier Structures based on Lightweight Network and Transfer Learning WANG Wei, JIANG Shao-fei, SONG Hua-lin, LI Peng-ze, WANG Sheng-xian, SU Zhen-heng(88)

Intelligent Recognition of Multiple Diseases in Steel Bridges Based on Improved Mask R-CNN PENG Wei-bing, ZHANG Ming-jian, QUAN Liu-meng, LI Min, ZHAO Yu-xin(100)

Steel Bridge Corrosion Detection Method Combining Adaptive Illumination Preprocessing and Deep Learning WU Le-mou, ZHANG Qing-hua, ZHENG Qiu-song, SHAO Shao-bing, CUI Chuang(110)

Visual Detection Method of Small Loosening of High-strength Bolts in Steel Structure Engineering YAO Zhi-dong, CHEN Zhi-hua, LIU Hong-bo, LU Jia-qi(125)

Measurement of Bridge Influence Lines Based on Machine Vision and Interval Affine Algorithm ZHOU Yun, ZHANG Lu-yao, HU Jin-nan, HAO Guan-wang(142)

Beam Bridge Damage Identification by Data Fusion of Accelerometers and Computer Vision Measurements of Moving Vehicle-induced Responses WU Tong, TANG Liang, ZHOU Feng-li, ZHANG Yu-dan, ZHOU Zhi-xiang(152)

• Pavement Engineering •

Indicators and Method to Quantify the Degree of Blending Between Aged and Virgin Asphalt Binder in Hot Recycled Mixtures Based on Atomic Force Microscopy LI Ming-chen, LIU Li-ping, XING Cheng-wei, HUANG Wei-qi(168)

Use of Synergistic Effect of Zinc Oxide/Expanded Vermiculite Composite to Retard Asphalt Aging Behavior ZHANG Heng-long, DUAN Hai-hui, LUO Yao(183)

• Subgrade Engineering •

Study on Spatial Variability of Soft Soil Parameters for Expressway Expansion Foundation Based on Piezocone Penetration Testing WANG Cai-jin, WU Meng, YANG Yang, HE Huan, CAI Guo-jun, LIU Xue-ning, LIU Song-yu(197)

Bearing Characteristics and Influence Parameters of Rigid Pile-semi-rigid Pile-geogrid Reinforced Subgrade DENG You-sheng, LI Wen-jie, FENG Zhong-ju, ZHANG Ke-qin, LI Long, YAO Zhi-gang, ZHAO Hui-ling(209)

• Traffic Engineering •

Driving Capability Requirements for Leading Vehicle Driver of Intelligent Connected Truck Platoon: Review WU Yi-ping, ZHAO Zi-long, NI Peng(219)

Adaptive Longitudinal Control of Vehicle Platoon Based on Combination Spacing Policy LI Yong-fu, WANG Xing-quan, HUANG Long-wang, HUANG Xin, HU Xiao-song(239)

Urban Multimodal Transportation Generative Pretrained Transformer Foundation Model: Hierarchical Techniques and Application Scenarios of Spot-corridor-network Decomposition ZHOU Zhen, GU Zi-yuan, QU Xiao-bo, LIU Pan, LIU Zhi-yuan(253)

Early-onset Breakdown of Bottleneck Traffic at Expressway Merging Area, Part II : Causes Analysis YE Ying-jun, SUN Jian(275)

• Automotive Engineering •

A Rapid Capacity Estimation Method for Lithium-ion Batteries Based on Medium-low Frequency Electrochemical Impedance Spectroscopy SUN Bing-xiang, PANG Jun-feng, SU Xiao-jia, FU Da-wei, FU Zhi-cheng(293)

Optimized Solution Method for Vehicle Durability User-correlated Model Based on Signal Weight Analysis YANG Yong-le, DONG Shuai, WANG Qing-hua, LIN Wei-xiong, ZHANG Zhi-fei(304)

Construction of a Trip Dynamic Factor to Characterize the Real Driving Emissions of Vehicles ZHANG Li, FU Ming-ming, LI Yang, CHANG Hong, WANG Rui, YANG Zhi-kun(315)