1. Record Nr. UNINA9910754096903321

Autore	Sousa A. Augusto de
Titolo	Computer Vision, Imaging and Computer Graphics Theory and Applications : 17th International Joint Conference, VISIGRAPP 2022, Virtual Event, February 6–8, 2022, Revised Selected Papers / / edited by A. Augusto de Sousa, Kurt Debattista, Alexis Paljic, Mounia Ziat, Christophe Hurter, Helen Purchase, Giovanni Maria Farinella, Petia Radeva, Kadi Bouatouch
Pubbl/distr/stampa	Cham : , : Springer Nature Switzerland : , : Imprint : Springer, , 2023
ISBN	9783031457258 3031457250
Edizione	[1st ed. 2023.]
Descrizione fisica	1 online resource (343 pages)
Collana	Communications in Computer and Information Science, , 1865-0937 ; ; 1815
Altri autori (Persone)	DebattistaKurt PaljicAlexis ZiatMounia HurterChristophe PurchaseHelen FarinellaGiovanni Maria RadevaPetia BouatouchKadi
Disciplina	006
Soggetti	Image processing - Digital techniques Computer vision Computer engineering Computer networks Artificial intelligence Application software User interfaces (Computer systems) Human-computer interaction Computer Imaging, Vision, Pattern Recognition and Graphics Computer Engineering and Networks Artificial Intelligence Computer and Information Systems Applications User Interfaces and Human Computer Interaction
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa

Livello bibliografico	Monografia
Nota di contenuto	Intro -- Preface -- Organization -- Contents -- Automatic Threshold RanSaC Algorithms for Pose Estimation Tasks -- 1 Introduction -- 2 RanSaC Methods -- 2.1 Notation -- 2.2 History of RanSaC Algorithms -- 3 Adaptative RanSaC Algorithms -- 4 Data Generation Methodology -- 4.1 Models and Estimators -- 4.2 Semi-artificial Data Generation Method -- 5 Benchmark and Results -- 5.1 Performance Measures -- 5.2 Parameters -- 5.3 Results -- 5.4 Analysis and Comparison -- 6 Conclusion -- References -- Semi-automated Generation of Accurate Ground-Truth for 3D Object Detection -- 1 Introduction -- 2 Related Work on 3D Object Detection -- 2.1 Techniques for Early Object Detection -- 2.2 CNN-Based 3D Object Detection -- 2.3 Conclusions on Related Work -- 3 Semi-automated 3D Dataset Generation -- 3.1 Orientation Estimation -- 3.2 3D Box Estimation -- 4 Experiments -- 4.1 Experimental Setup and Configuration -- 4.2 Evaluation 1: Annotation-Processing Chain -- 4.3 Evaluation 2: 3D Object Detector Trained on the Annotation-Processing Configurations -- 4.4 Cross-Validation on KITTI Dataset -- 4.5 Unsupervised Approach -- 5 Conclusion -- References -- A Quantitative and Qualitative Analysis on a GAN-Based Face Mask Removal on Masked Images and Videos -- 1 Introduction -- 2 Related Works -- 2.1 Inpainting -- 2.2 Face Completion -- 3 Method -- 3.1 Pix2pix-Based Inpainting -- 3.2 Custom Loss Function -- 3.3 System Overview -- 3.4 Predicting Feature Points on a Face -- 4 Experiment -- 4.1 Image Evaluation -- 4.2 Video Evaluation -- 5 Discussion -- 5.1 Quality of Generated Images -- 5.2 Discriminating Facial Expressions -- 5.3 Generating Smooth Videos -- 5.4 Additional Quantitative Analyses -- 6 Limitations -- 7 Conclusion -- References -- Dense Material Segmentation with Context-Aware Network -- 1 Introduction -- 2 Related Works -- 2.1 Material Segmentation Datasets. 2.2 Fully Convolutional Network -- 2.3 Material Segmentation with FCN -- 2.4 Global and Local Training -- 2.5 Boundary Refinement -- 2.6 Self-training -- 3 CAM-SegNet Architecture -- 3.1 Feature Sharing Connection -- 3.2 Context-Aware Dense Material Segmentation -- 3.3 Self-training Approach -- 4 CAM-SegNet Experiment Configurations -- 4.1 Dataset -- 4.2 Evaluation Metrics -- 4.3 Implementation Details -- 5 CAM-SegNet Performance Analysis -- 5.1 Quantitative Analysis -- 5.2 Qualitative Analysis -- 5.3 Ablation Study -- 6 Conclusions -- References -- Partial Alignment of Time Series for Action and Activity Prediction -- 1 Introduction -- 2 Related Work -- 3 Temporal Alignment of Action/Activity Sequences -- 3.1 Alignment Methods - Segmented Sequences -- 3.2 Alignment Methods - Unsegmented Sequences -- 3.3 Action and Activity Prediction -- 4 Experimental Results -- 4.1 Datasets -- 4.2 Alignment-Based Prediction in Segmented Sequences -- 4.3 Alignment-Based Action Prediction in Unsegmented Sequences -- 4.4 Graph-Based Activity Prediction -- 4.5 Duration Prognosis -- 5 Conclusions -- References -- Automatic Bi-LSTM Architecture Search Using Bayesian Optimisation for Vehicle Activity Recognition -- 1 Introduction -- 2 Related Work -- 2.1 Trajectory Representation and Analysis -- 2.2 Deep Neural Network Optimisation -- 3 Method -- 3.1 Qualitative Feature Representation -- 3.2 Automatic Bi-LSTM Architecture Search -- 3.3 Optimal Architecture Selection -- 3.4 VNet Modelling -- 4 Vehicle Activity Datasets -- 4.1 Highway Drone Dataset -- 4.2 Traffic Dataset -- 4.3 Vehicle Obstacle Interaction Dataset -- 4.4 Next Generation Simulation Dataset -- 4.5

Combined Dataset -- 5 Experiments and Results -- 5.1 Optimal Architecture Selection -- 5.2 Evaluation of the Optimal Architecture -- 6 Discussion -- 7 Conclusion -- References.
ANTENNA: Visual Analytics of Mobility Derived from Cellphone Data -- 1 Introduction -- 2 Related Work -- 2.1 Reconstruction and Extraction of Trajectories -- 2.2 Visual Analytics of Movement -- 3 System Overview -- 3.1 Backend and Frontend -- 4 Data -- 4.1 Database -- 4.2 Processing Pipeline -- 5 ANTENNA's Visualization -- 5.1 Tasks and Design Requirements -- 5.2 Visual Query -- 5.3 Grid Aggregation Mode -- 5.4 Road Aggregation Mode -- 6 Usage Scenarios -- 6.1 Scenario 1: Inter-Urban Movements -- 6.2 Scenario 2: Group Movements -- 7 User Testing -- 7.1 Methodology -- 7.2 Tasks -- 7.3 Results -- 8 Discussion -- 9 Conclusion -- References -- Influence of Errors on the Evaluation of Text Classification Systems -- 1 Introduction -- 2 Setup -- 2.1 Models and Dataset -- 2.2 Explanation Methods -- 2.3 Evaluation of the Models -- 2.4 System Output and Explanation Visualization -- 3 Experiment 1: Effect on the Evaluation of One System -- 3.1 Experiment Design -- 3.2 Task and Questionnaire -- 3.3 Participant Recruitment -- 3.4 Results -- 3.5 Qualitative Results -- 4 Experiment 2: Effect on the Comparison of Two Systems -- 4.1 Experiment Design -- 4.2 Task and Questionnaire -- 4.3 Participant Recruitment -- 4.4 Results -- 5 Experiment 3: Effect of the Comparison of Two Systems (Bias Error Pattern) -- 5.1 Experiment Design -- 5.2 Results -- 6 Experiment 4: Effect of Incorrect Examples (with a Different Language) -- 6.1 Experiment Design -- 6.2 Task and Questionnaire -- 6.3 Participant Recruitment -- 6.4 Translation -- 6.5 Results -- 6.6 Qualitative Results -- 7 Discussion -- 7.1 Limitations -- 8 Conclusion -- References -- Autonomous Navigation Method Considering Passenger Comfort Recognition for Personal Mobility Vehicles in Crowded Pedestrian Spaces -- 1 Introduction -- 2 Process of Passenger Comfort Recognition.
3 Investigation of Passenger Comfort Recognition -- 3.1 Passenger Comfort Evaluation Experiment -- 3.2 Effects of Current Situation on Comfort Recognition -- 3.3 Effects of Future Status on Comfort Recognition -- 3.4 Characteristics of Passenger Comfort Recognition -- 4 Proposal of an Autonomous Navigation Method Considering Passenger Comfort Recognition -- 4.1 Design -- 4.2 Validation -- 5 Conclusions -- References -- The Electrodermal Activity of Player Experience in Virtual Reality Games: An Extended Evaluation of the Phasic Component -- 1 Introduction -- 2 Background -- 2.1 Related Work -- 3 Methodology -- 3.1 EDA Data Capture and Phasic Component Calculation -- 3.2 Phasic Component Analysis -- 3.3 Game Experience Analysis -- 3.4 Statistical Analyses -- 3.5 Implementation Tools -- 3.6 Ethical Considerations -- 4 Results -- 4.1 Peaks per Minute -- 4.2 Average Peak Amplitude -- 4.3 Game Experience -- 4.4 Correlation Analysis -- 5 Discussion -- 6 Conclusion and Future Work -- References -- MinMax-CAM: Increasing Precision of Explaining Maps by Contrasting Gradient Signals and Regularizing Kernel Usage -- 1 Introduction -- 2 Related Work -- 3 Contrasting Class Gradient Information -- 3.1 Intuition -- 3.2 Definition -- 3.3 Reducing Noise by Removing Negative Contributions -- 4 Reducing Shared Information Between Classifiers -- 4.1 Counterbalancing Activation Vanishing -- 5 Experimental Setup -- 5.1 Evaluations over Architectures and Problem Domains -- 5.2 Training Procedure -- 5.3 Evaluation Metrics -- 6 Results -- 6.1 Comparison Between Architectures -- 6.2 Evaluation over Distinct Problem Domains -- 6.3 Kernel Usage Regularization -- 7 Conclusions -- References -- DIAR: Deep Image Alignment and Reconstruction Using Swin Transformers -- 1 Introduction -- 2 Related

Work -- 3 Dataset -- 3.1 Aligned Dataset -- 3.2 Misaligned Dataset. 4 Deep Image Alignment -- 5 Architecture -- 5.1 Deep Residual Sets -- 5.2 Video Swin Transformer -- 5.3 Image Reconstruction Using Swin Transformers -- 5.4 Training -- 6 Evaluation -- 6.1 Aggregation -- 6.2 Image Reconstruction -- 6.3 Alignment and Reconstruction: -- 7 Conclusion -- References -- Active Learning with Data Augmentation Under Small vs Large Dataset Regimes for Semantic-KITTI Dataset -- 1 Introduction -- 1.1 State of the Art -- 2 Methodology -- 3 Validation and Results -- 3.1 Class Based Learning Efficiency -- 3.2 Dataset Size Growth: 1/4 Semantic-KITTI vs Full Semantic-KITTI -- 3.3 t-SNE Problem Analysis -- 4 Conclusion -- 4.1 Challenges and Future Scope -- References -- Transformers in Unsupervised Structure-from-Motion -- 1 Introduction -- 2 Related Works -- 3 Method -- 3.1 Monocular Unsupervised SfM -- 3.2 Architecture -- 3.3 Intrinsics -- 3.4 Appearance-Based Losses -- 4 Experiments -- 4.1 Datasets -- 4.2 Architecture -- 4.3 Implementation Details -- 4.4 Evaluation Metrics -- 4.5 Impact of Architecture -- 4.6 Generalizability -- 4.7 Auxiliary Tasks -- 4.8 Depth Estimation with Learned Camera Intrinsics -- 4.9 Efficiency -- 4.10 Comparing Performance -- 5 Conclusion -- References -- A Study of Aerial Image-Based 3D Reconstructions in a Metropolitan Area -- 1 Introduction -- 2 Previous Work -- 3 Urban Environment -- 3.1 Ground Truth -- 3.2 Image Sets -- 3.3 Urban Categorization -- 4 Experimental Setup -- 4.1 3D Reconstruction Techniques -- 4.2 Pipelines Under Study -- 4.3 Alignment -- 5 Experimental Results -- 5.1 Scene Level Evaluation -- 5.2 Urban Category Centric Evaluation -- 5.3 General Pipeline Evaluation -- 6 Conclusion -- References -- Author Index.

Sommario/riassunto

This book constitutes the referred proceedings of the 17th International Joint Conference on Computer Vision, Imaging and Computer Graphics Theory and Applications, VISIGRAPP 2022, Virtual Event, February 6–8, 2022. The 15 full papers included in this book were carefully reviewed and selected from 392 submissions. The purpose of VISIGRAPP is to bring together researchers and practitioners interested in both theoretical advances and applications of computer vision, computer graphics and information visualization. VISIGRAPP is composed of four co-located conferences, each specialized in at least one of the aforementioned main knowledge areas, namely GRAPP, IVAPP, HUCAPP and VISAPP. .