

1. Record Nr.	UNISA996500061903316
Titolo	Frontiers in handwriting recognition : 18th international conference, ICFHR 2022, Hyderabad, India, December 4-7, 2022, proceedings // edited by Utkarsh Porwal, Alicia Fornes, and Faisal Shafait
Pubbl/distr/stampa	Cham, Switzerland : , : Springer, , [2022] ©2022
ISBN	3-031-21648-2
Descrizione fisica	1 online resource (567 pages)
Collana	Lecture Notes in Computer Science ; ; v.13639
Disciplina	006.424
Soggetti	Optical character recognition
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Intro -- Preface -- Organization -- Contents -- Historical Document Processing -- A Few Shot Multi-representation Approach for N-Gram Spotting in Historical Manuscripts -- 1 Introduction -- 2 Related Work -- 3 Methodology -- 3.1 The Base Architecture -- 3.2 The Multi-modal Architecture -- 3.3 Multi-modal Architecture with Early Fusion -- 4 Experiments -- 4.1 Experimental Setup -- 4.2 Evaluation Metrics -- 4.3 Results and Discussion -- 5 Conclusion -- References -- Text Edges Guided Network for Historical Document Super Resolution -- 1 Introduction -- 2 Related Work -- 3 Dataset -- 4 Method -- 4.1 Model Framework -- 4.2 Objective Function -- 5 Experiment -- 5.1 Data Preparation -- 5.2 Hyperparameters Tuning Using Grid Search -- 5.3 Super-Resolution Evaluation -- 6 Conclusion -- References -- CurT: End-to-End Text Line Detection in Historical Documents with Transformers -- 1 Introduction -- 2 Related Work -- 2.1 Transformers for Computer Vision -- 2.2 DETR and Variants -- 2.3 Text Baseline Detection -- 3 Contribution -- 4 The CurT Model -- 4.1 Text Line Data Model -- 4.2 Curve Detection Set Prediction Loss -- 4.3 CurT Architecture -- 5 Experiments -- 5.1 Dataset and Evaluation Protocol -- 5.2 Implementation Details -- 5.3 Overall Performance -- 5.4 Ordered Prediction -- 5.5 Further Extensions -- 6 Conclusion -- References -- Date Recognition in Historical Parish Records -- 1 Introduction -- 2 Data -- 3 Date Recognition -- 4 Experiments -- 4.1

Data Splits -- 4.2 Segmentation -- 4.3 Models -- 4.4 Evaluation
Metrics -- 5 Results and Analysis -- 6 Related Work -- 7 Future Work
-- 8 Conclusion -- References -- Improving Isolated Glyph
Classification Task for Palm Leaf Manuscripts -- 1 Introduction -- 2
Palm Leaf Manuscripts from Southeast Asia -- 2.1 Corpus and
Languages -- 2.2 Challenges of Isolated Glyph Datasets -- 3 Overall
Frameworks.
3.1 Data Pattern Generations -- 3.2 Image Enhancement for Palm Leaf
Manuscripts (IEPalm) -- 3.3 Training CNNs and ViTs -- 4 Experimental
Setups and Results -- 4.1 Implementation Settings -- 4.2 Results -- 5
Conclusion -- References -- Signature Verification and Writer
Identification -- Impact of Type of Convolution Operation on
Performance of Convolutional Neural Networks for Online Signature
Verification -- 1 Introduction -- 2 Related Work -- 3 Proposed OSV
Framework -- 3.1 Input Representation, Type of Convolution and Order
of Convolution -- 3.2 Analyzing the Impact of Signature Length -- 3.3
Further Improvement of Input Representation -- 4 Comparison with
SOTA Methods -- 5 Conclusion and Future Work -- References --
COMPOSV++: Light Weight Online Signature Verification Framework
Through Compound Feature Extraction and Few-Shot Learning -- 1
Introduction -- 2 Literature Survey -- 3 Proposed Online Signature
Verification Framework -- 3.1 Proposed Novel Dimensionality
Reduction Algorithm -- 3.2 Proposed Separable Convolution Operation
Based OSV Framework: -- 4 Experimentation Analysis and Results -- 5
Conclusion and Future Work -- References -- Finger-Touch Direction
Feature Using a Frequency Distribution in the Writer Verification Base
on Finger-Writing of a Simple Symbol -- 1 Introduction -- 2 Writer
Verification Based on Finger-Writing of a Simple Symbol -- 3
Introduction of Finger-Touching Direction Feature -- 3.1 Finger-
Touching Direction -- 3.2 Evaluation of Verification Performance -- 3.3
Considerations -- 4 Introduction of Preprocessing -- 5 Frequency
Distribution as a New Feature -- 6 Conclusions -- References -- Self-
supervised Vision Transformers with Data Augmentation Strategies
Using Morphological Operations for Writer Retrieval -- 1 Introduction
-- 2 Related Work -- 3 Methodology -- 3.1 Preprocessing -- 3.2 Vision
Transformer.
3.3 Morphological Operations -- 3.4 Self-supervised Training -- 3.5
Page Descriptor and Retrieval -- 4 Experiments -- 4.1 Historical-WI
Dataset -- 4.2 Evaluation -- 4.3 Results -- 5 Conclusion -- References
-- EAU-Net: A New Edge-Attention Based U-Net for Nationality
Identification -- 1 Introduction -- 2 Related Work -- 3 Proposed Model
-- 3.1 Edge-Attention Based U-Net for Edge Detection -- 3.2
Nationality/Ethnicity Identification -- 4 Experimental Results -- 4.1
Ablation Study -- 4.2 Experiments on Edge Detection -- 4.3
Experiments on Classification of Nationality -- 4.4 Gender
Classification -- 4.5 Error Analysis -- 5 Conclusion and Future Work --
References -- Progressive Multitask Learning Network for Online
Chinese Signature Segmentation and Recognition -- 1 Introduction --
2 Methodology -- 2.1 Overview -- 2.2 Dual Channel Stroke Feature
Extraction Block (DSF-Block) -- 2.3 Stacked Transformer Encoder Block
(STE-Block) -- 2.4 Progressive Multitask Interaction Block (PMI-Block)
-- 2.5 Training Objective -- 3 Experiments -- 3.1 Database -- 3.2
Evaluation Metrics -- 3.3 Implementation Details -- 3.4 Qualitative
Results -- 3.5 Quantitative Results -- 3.6 Ablation Studies -- 4
Conclusion -- References -- Symbol and Graphics Recognition --
Musigraph: Optical Music Recognition Through Object Detection and
Graph Neural Network -- 1 Introduction -- 2 Related Work -- 2.1
Optical Music Recognition (OMR) -- 2.2 Graph Neural Network (GNN) --

3 The Musigraph Model -- 3.1 Object Detector -- 3.2 Graph Neural Network -- 4 Dataset -- 5 Experimental Validation -- 5.1 Object Detection Results -- 5.2 Graph Neural Network Results -- 6 Conclusions and Future Work -- References -- Combining CNN and Transformer as Encoder to Improve End-to-End Handwritten Mathematical Expression Recognition Accuracy -- 1 Introduction -- 2 Methodology -- 2.1 Baseline System.
2.2 Tandem Approach -- 2.3 Parallel Approach -- 2.4 Mixing Approach -- 3 Experimental Result -- 3.1 Experimental Setup -- 3.2 Overall Results -- 3.3 Effects of Number of Transformer Encoder Layers to Tandem Approach -- 3.4 Effects of Number of Transformer Encoder Layers to Parallel Approach -- 3.5 Effects of Number of Attention Heads to Mixing Approach -- 4 Conclusion -- References -- A Vision Transformer Based Scene Text Recognizer with Multi-grained Encoding and Decoding -- 1 Introduction -- 2 Related Works -- 2.1 Scene Text Recognition -- 2.2 Vision Transformer -- 2.3 Self-supervised Learning -- 3 Method -- 3.1 Pipeline -- 3.2 Two-Stage Encoder -- 3.3 Joint Decoder -- 3.4 MAE with Focusing Mechanism -- 3.5 Objective Functions and Training Strategies -- 4 Experiments -- 4.1 Datasets -- 4.2 Implementation Details -- 4.3 Comparisons with State-of-the-Arts -- 4.4 Ablation Studies -- 4.5 Experiments on Occlusion Scene Text -- 5 Conclusions -- References -- Spatial Attention and Syntax Rule Enhanced Tree Decoder for Offline Handwritten Mathematical Expression Recognition -- 1 Introduction -- 2 Related Works -- 3 Proposed Method -- 3.1 Child Node Prediction Module -- 3.2 Spatial Attention-Based Parent Node Prediction Module -- 3.3 Syntax Rule-Based Relation Prediction Module -- 3.4 Total Loss -- 4 Experiments -- 4.1 Dataset -- 4.2 Implementation Details -- 4.3 Ablation Experiment -- 4.4 Performance Comparison -- 5 Conclusion -- References -- Handwriting Recognition and Understanding -- FPRNet: End-to-End Full-Page Recognition Model for Handwritten Chinese Essay -- 1 Introduction -- 2 Related Works -- 2.1 Segmentation-Based Approaches -- 2.2 Segmentation-Free Approaches -- 3 Architecture -- 3.1 Encoder -- 3.2 Decoder -- 3.3 Order-Align Strategy -- 4 Experiments and Results -- 4.1 Dataset -- 4.2 Experimental Setup -- 4.3 Experimental Results.
5 Conclusion -- References -- Active Transfer Learning for Handwriting Recognition -- 1 Introduction -- 2 Related Work -- 2.1 Transfer Learning -- 2.2 Active Learning -- 2.3 Active Transfer Learning -- 3 Methodology -- 3.1 Model Weights Initialization -- 3.2 Active Learning Sample Selection -- 3.3 Supervised Training -- 3.4 Model Evaluation -- 4 Results -- 4.1 Methods Comparison -- 4.2 Incremental Iterative Training -- 4.3 Selection of Pre-trained Model Weights -- 5 Conclusion -- References -- Recognition-Free Question Answering on Handwritten Document Collections -- 1 Introduction -- 2 Related Work -- 2.1 Document Retrieval -- 2.2 Question Answering -- 3 Method -- 3.1 Query and Document Representation -- 3.2 Retrieval -- 3.3 Question Answering -- 4 Experiments -- 4.1 Dataset -- 4.2 Implementation Details -- 4.3 Results -- 5 Conclusions -- References -- Handwriting Recognition and Automatic Scoring for Descriptive Answers in Japanese Language Tests -- 1 Introduction -- 2 Related Works -- 3 Handwritten Japanese Answer Dataset -- 3.1 Handwritten Text-Line Segmentation -- 3.2 Splitting and Labeling Samples -- 3.3 Statistics -- 4 Handwritten Answer Recognition and Automatic Scoring -- 4.1 Handwritten Answer Recognition -- 4.2 Automatic Scoring -- 5 Experiment Results -- 5.1 Performance of Recognition Model -- 5.2 Performance of Automatic Scoring Model -- 6 Conclusions -- References -- A Weighted Combination of Semantic and Syntactic Word Image Representations --

1 Introduction -- 2 Related Work -- 2.1 Traditional Word Spotting --
2.2 Semantic Word Spotting -- 2.3 Word Embeddings -- 3 Method --
3.1 Word Image Representation -- 3.2 Weighted Combination
Approaches -- 3.3 Normalization -- 4 Experiments -- 4.1 Datasets --
4.2 Implementation Details -- 4.3 Evaluation Protocol -- 4.4
Normalization -- 4.5 Results -- 5 Conclusions -- References.
Combining Self-training and Minimal Annotations for Handwritten Word
Recognition.
