

## Complete Publication List of Kaspar Riesen

### 1. Publications in International Peer-Reviewed Scientific Journals

1. Anthony Gillioz, Kaspar Riesen:  
Graph-based pattern recognition on spectral reduced graphs.  
Pattern Recognit. 144: 109859 (2023)
2. Anthony Gillioz, Kaspar Riesen:  
Building Multiple Classifier Systems Using Linear Combinations of Reduced Graphs.  
SN Comput. Sci. 4(6): 743 (2023)
3. Mathias Fuchs, Kaspar Riesen:  
A novel way to formalize stable graph cores by using matching-graphs.  
Pattern Recognit. 131: 108846 (2022)
4. Michael Stauffer, Andreas Fischer, Kaspar Riesen:  
Filters for graph-based keyword spotting in historical handwritten documents.  
Pattern Recognit. Lett. 134: 125-134 (2020)
5. Kaspar Riesen, Miquel Ferrer, Horst Bunke:  
Approximate Graph Edit Distance in Quadratic Time.  
IEEE ACM Trans. Comput. Biol. Bioinform. 17(2): 483-494 (2020)
6. Kaspar Riesen, Roman Schmidt:  
Online signature verification based on string edit distance.  
Int. J. Document Anal. Recognit. 22(1): 41-54 (2019)
7. Narayan Schütz, Alexander B. Leichtle, Kaspar Riesen:  
A comparative study of pattern recognition algorithms for predicting the inpatient mortality risk using routine laboratory measurements.  
Artif. Intell. Rev. 52(4): 2559-2573 (2019)
8. Mohammad Reza Ameri, Michael Stauffer, Kaspar Riesen, Tien D. Bui, Andreas Fischer:  
Graph-based keyword spotting in historical manuscripts using Hausdorff edit distance.  
Pattern Recognit. Lett. 121: 61-67 (2019)
9. Paul Maergner, Vinaychandran Pondenkandath, Michele Alberti, Marcus Liwicki, Kaspar Riesen, Rolf Ingold, Andreas Fischer:  
Combining graph edit distance and triplet networks for offline signature verification.  
Pattern Recognit. Lett. 125: 527-533 (2019)
10. Kaspar Riesen, Andreas Fischer, Horst Bunke:  
On the Impact of Using Utilities Rather than Costs for Graph Matching.  
Neural Process. Lett. 48(2): 691-707 (2018)
11. Michael Stauffer, Andreas Fischer, Kaspar Riesen:  
Keyword spotting in historical handwritten documents based on graph matching.  
Pattern Recognit. 81: 240-253 (2018)

12. Kaspar Riesen, Thomas Hanne, Roman Schmidt:  
Sketch-Based User Authentication With a Novel String Edit Distance Model.  
IEEE Trans. Syst. Man Cybern. Syst. 48(3): 460-472 (2018)
13. Brian Kenji Iwana, Volkmar Frinken, Kaspar Riesen, Seiichi Uchida:  
Efficient temporal pattern recognition by means of dissimilarity space embedding  
with discriminative prototypes.  
Pattern Recognit. 64: 268-276 (2017)
14. Andreas Fischer, Kaspar Riesen, Horst Bunke:  
Improved quadratic time approximation of graph edit distance by combining Haus-  
dorff matching and greedy assignment.  
Pattern Recognit. Lett. 87: 55-62 (2017)
15. Kaspar Riesen, Miquel Ferrer:  
Predicting the correctness of node assignments in bipartite graph matching.  
Pattern Recognit. Lett. 69: 8-14 (2016)
16. Kaspar Riesen, Andreas Fischer, Horst Bunke:  
Estimating Graph Edit Distance Using Lower and Upper Bounds of Bipartite Ap-  
proximations.  
Int. J. Pattern Recognit. Artif. Intell. 29(2): 1550011:1-1550011:27 (2015)
17. Andreas Fischer, Ching Y. Suen, Volkmar Frinken, Kaspar Riesen, Horst Bunke:  
Approximation of graph edit distance based on Hausdorff matching.  
Pattern Recognit. 48(2): 331-343 (2015)
18. Kaspar Riesen, Horst Bunke:  
Improving bipartite graph edit distance approximation using various search strate-  
gies.  
Pattern Recognit. 48(4): 1349-1363 (2015)
19. Miquel Ferrer, Francesc Serratosa, Kaspar Riesen:  
Improving bipartite graph matching by assessing the assignment confidence.  
Pattern Recognit. Lett. 65: 29-36 (2015)
20. Ehsan Zare Borzeshi, Massimo Piccardi, Kaspar Riesen, Horst Bunke:  
Discriminative prototype selection methods for graph embedding.  
Pattern Recognit. 46(6): 1648-1657 (2013)
21. Stefan Fankhauser, Kaspar Riesen, Horst Bunke, Peter J. Dickinson:  
Suboptimal Graph Isomorphism using bipartite Matching.  
Int. J. Pattern Recognit. Artif. Intell. 26(6) (2012)
22. Horst Bunke, Kaspar Riesen:  
Towards the unification of structural and statistical pattern recognition.  
Pattern Recognit. Lett. 33(7): 811-825 (2012)
23. Horst Bunke, Kaspar Riesen:  
Recent advances in graph-based pattern recognition with applications in document  
analysis.  
Pattern Recognit. 44(5): 1057-1067 (2011)

24. Horst Bunke, Kaspar Riesen:  
Improving vector space embedding of graphs through feature selection algorithms.  
Pattern Recognit. 44(9): 1928-1940 (2011)
25. Miquel Ferrer, Ernest Valveny, Francesc Serratosa, Kaspar Riesen, Horst Bunke:  
Generalized median graph computation by means of graph embedding in vector spaces.  
Pattern Recognit. 43(4): 1642-1655 (2010)
26. Kaspar Riesen, Horst Bunke:  
Reducing the dimensionality of dissimilarity space embedding graph kernels.  
Eng. Appl. Artif. Intell. 22(1): 48-56 (2009)
27. Kaspar Riesen, Horst Bunke:  
Graph Classification Based on Vector Space Embedding.  
Int. J. Pattern Recognit. Artif. Intell. 23(6): 1053-1081 (2009)
28. Kaspar Riesen, Horst Bunke:  
Approximate graph edit distance computation by means of bipartite graph matching.  
Image Vis. Comput. 27(7): 950-959 (2009)
29. Kaspar Riesen, Horst Bunke:  
Graph Classification by Means of Lipschitz Embedding.  
IEEE Trans. Syst. Man Cybern. Part B 39(6): 1472-1483 (2009)

## 2. Books/Monographs

1. Kaspar Riesen: Java in 14 Wochen.  
Springer 2020, ISBN 978-3-658-30312-9, pp. 1-385
2. Michael Stauffer, Andreas Fischer, Kaspar Riesen:  
Graph-Based Keyword Spotting.  
Series in Machine Perception and Artificial Intelligence 86, WorldScientific 2019,  
ISBN: 978-981-120-663-4, pp. 1-296
3. Kaspar Riesen:  
Structural Pattern Recognition with Graph Edit Distance - Approximation Algorithms and Applications.  
Advances in Computer Vision and Pattern Recognition, Springer 2015, ISBN 978-3-319-27251-1, pp. 3-156
4. Kaspar Riesen, Horst Bunke:  
Graph Classification and Clustering Based on Vector Space Embedding.  
Series in Machine Perception and Artificial Intelligence 77, WorldScientific 2010,  
ISBN 978-981-4304-71-9, pp. 1-348

### 3. Contributions to Books

1. Michael Stauffer, Paul Maergner, Andreas Fischer, Kaspar Riesen:  
A Survey of State of the Art Methods Employed in the Offline Signature Verification Process.  
New Trends in Business Information Systems and Technology; Digital Innovation and Digital Business Transformation Edited By: R. Dornberger (2021)
2. Paul Maergner, Kaspar Riesen, Rolf Ingold, Andreas Fischer:  
Signature verification via graph-based methods.  
Handbook of Pattern Recognition and Computer Vision (6th Edition) Edited By: C. H. Chen (2020)
3. Kaspar Riesen, Horst Bunke:  
Graph Edit Distance – Novel Approximation Algorithms.  
Handbook of Pattern Recognition and Computer Vision (5th Edition) Edited By: C. H. Chen (2016)
4. Kaspar Riesen, Xiaoyi Jiang, Horst Bunke:  
Exact and Inexact Graph Matching: Methodology and Applications.  
Managing and Mining Graph Data 2010: 217-247

### 4. Peer-Reviewed Conference Papers

1. Calvin Dobler, Kaspar Riesen:  
Learning Graph Matching with Graph Neural Networks.  
ANNPR 2024: 3-12
2. Hannes Thurnherr, Kaspar Riesen:  
Neural Decompiling of Tracr Transformers.  
ANNPR 2024: 25-36
3. Benjamin Fankhauser, Vidushi Bigler, Kaspar Riesen:  
Leveraging LSTM Embeddings for River Water Temperature Modeling.  
ANNPR 2024: 283-294
4. Benjamin Fankhauser, Vidushi Bigler, Kaspar Riesen:  
Impute Water Temperature in the Swiss River Network Using LSTMs.  
ICPRAM 2024: 732-738
5. Linlin Jia, Xiao Ning, Benoit Gaüzère, Paul Honeine, Kaspar Riesen:  
Bridging Distinct Spaces in Graph-Based Machine Learning.  
ACPR (2) 2023: 1-14
6. Anthony Gillioz, Kaspar Riesen:  
Graph-Based vs. Vector-Based Classification: A Fair Comparison.  
GbRPR 2023: 25-34
7. Mathias Fuchs, Kaspar Riesen:  
Matching-Graphs for Building Classification Ensembles.  
GbRPR 2023: 102-112

8. Benjamin Fankhauser, Vidushi Bigler, Kaspar Riesen:  
Graph-Based Deep Learning on the Swiss River Network.  
GbRPR 2023: 172-181
9. Anthony Gillioz, Kaspar Riesen:  
Two-Step Graph Classification on the Basis of Hierarchical Graphs.  
ICPRAM 2023: 296-303
10. Corina Masanti, Hans Friedrich Witschel, Kaspar Riesen:  
Novel Benchmark Data Set for Automatic Error Detection and Correction.  
NLDB 2023: 511-521
11. Mathias Fuchs, Kaspar Riesen:  
Graph Augmentation for Neural Networks Using Matching-Graphs.  
ANNPR 2022: 3-15
12. Mathias Fuchs, Kaspar Riesen:  
Augment Small Training Sets Using Matching-Graphs.  
ICPRAI (2) 2022: 343-354
13. Anthony Gillioz, Kaspar Riesen:  
Improving Graph Classification by Means of Linear Combinations of Reduced Graphs.  
ICPRAM 2022: 17-23
14. Anthony Gillioz, Kaspar Riesen:  
Graph Reduction Neural Networks for Structural Pattern Recognition.  
S+SSPR 2022: 64-73
15. Anthony Gillioz, Kaspar Riesen:  
Speeding up Graph Matching by Means of Systematic Graph Reductions Using  
Centrality Measures.  
ICPRS 2022: 1-7
16. Mathias Fuchs, Kaspar Riesen:  
Iterative Creation of Matching-Graphs - Finding Relevant Substructures in Graph  
Sets.  
CIARP 2021: 382-391
17. Hans Friedrich Witschel, Kaspar Riesen, Loris Grether:  
Natural Language-based User Guidance for Knowledge Graph Exploration: A User  
Study.  
KDIR 2021: 95-102
18. Mathias Fuchs, Kaspar Riesen:  
Graph Embedding in Vector Spaces Using Matching-Graphs.  
SISAP 2021: 352-363
19. Hans Friedrich Witschel, Kaspar Riesen, Loris Grether:  
KvGR: A Graph-Based Interface for Explorative Sequential Question Answering on  
Heterogeneous Information Sources.  
ECIR (1) 2020: 760-773
20. Mathias Fuchs, Kaspar Riesen:  
Matching of Matching-Graphs - A Novel Approach for Graph Classification.  
ICPR 2020: 6570-6576

21. Kaspar Riesen, Hans Friedrich Witschel, Loris Grether:  
A Novel Data Set for Information Retrieval on the Basis of Subgraph Matching.  
S+SSPR 2020: 205-215
22. Michael Stauffer, Paul Maergner, Andreas Fischer, Kaspar Riesen:  
Cross-Evaluation of Graph-Based Keyword Spotting in Handwritten Historical Documents.  
GbRPR 2019: 45-55
23. Michael Stauffer, Paul Maergner, Andreas Fischer, Kaspar Riesen:  
Graph Embedding for Offline Handwritten Signature Verification.  
ICBEA 2019: 69-76
24. Michael Stauffer, Paul Maergner, Andreas Fischer, Rolf Ingold, Kaspar Riesen:  
Offline Signature Verification using Structural Dynamic Time Warping.  
ICDAR 2019: 1117-1124
25. Michael Stauffer, Andreas Fischer, Kaspar Riesen:  
Graph-Based Keyword Spotting in Historical Documents Using Context-Aware Hausdorff Edit Distance.  
DAS 2018: 49-54
26. Paul Maergner, Nicholas R. Howe, Kaspar Riesen, Rolf Ingold, Andreas Fischer:  
Offline Signature Verification Via Structural Methods: Graph Edit Distance and Inkball Models.  
ICFHR 2018: 163-168
27. Paul Maergner, Vinaychandran Pondenkandath, Michele Alberti, Marcus Liwicki, Kaspar Riesen, Rolf Ingold, Andreas Fischer:  
Offline Signature Verification by Combining Graph Edit Distance and Triplet Networks.  
S+SSPR 2018: 470-480
28. Michael Stauffer, Andreas Fischer, Kaspar Riesen:  
Speeding-Up Graph-Based Keyword Spotting by Quadtree Segmentations.  
CAIP (1) 2017: 304-315
29. Michael Stauffer, Andreas Fischer, Kaspar Riesen:  
Speeding-Up Graph-Based Keyword Spotting in Historical Handwritten Documents.  
GbRPR 2017: 83-93
30. Kaspar Riesen, Andreas Fischer, Horst Bunke:  
Improved Graph Edit Distance Approximation with Simulated Annealing.  
GbRPR 2017: 222-231
31. Michael Stauffer, Thomas Tschachtli, Andreas Fischer, Kaspar Riesen:  
A Survey on Applications of Bipartite Graph Edit Distance.  
GbRPR 2017: 242-252
32. Michael Stauffer, Andreas Fischer, Kaspar Riesen:  
Ensembles for Graph-Based Keyword Spotting in Historical Handwritten Documents.  
ICDAR 2017: 714-720

33. Paul Maergner, Kaspar Riesen, Rolf Ingold, Andreas Fischer:  
A Structural Approach to Offline Signature Verification Using Graph Edit Distance.  
ICDAR 2017: 1216-1222
34. Kaspar Riesen, Andreas Fischer, Horst Bunke:  
Approximation of Graph Edit Distance by Means of a Utility Matrix.  
ANNPR 2016: 185-194
35. Xavier Cortés, Francesc Serratosa, Kaspar Riesen:  
On the Relevance of Local Neighbourhoods for Greedy Graph Edit Distance.  
S+SSPR 2016: 121-131
36. Michael Stauffer, Andreas Fischer, Kaspar Riesen:  
A Novel Graph Database for Handwritten Word Images.  
S+SSPR 2016: 553-563
37. Michael Stauffer, Andreas Fischer, Kaspar Riesen:  
Graph-Based Keyword Spotting in Historical Handwritten Documents.  
S+SSPR 2016: 564-573
38. Kaspar Riesen, Miquel Ferrer, Andreas Fischer, Horst Bunke:  
Approximation of Graph Edit Distance in Quadratic Time.  
GbRPR 2015: 3-12
39. Miquel Ferrer, Francesc Serratosa, Kaspar Riesen:  
A First Step Towards Exact Graph Edit Distance Using Bipartite Graph Matching.  
GbRPR 2015: 77-86
40. Andreas Fischer, Seiichi Uchida, Volkmar Frinken, Kaspar Riesen, Horst Bunke:  
Improving Hausdorff Edit Distance Using Structural Node Context.  
GbRPR 2015: 148-157
41. Brian Kenji Iwana, Seiichi Uchida, Kaspar Riesen, Volkmar Frinken:  
Tackling temporal pattern recognition by vector space embedding.  
ICDAR 2015: 816-820
42. Hans Friedrich Witschel, Simon Loo, Kaspar Riesen:  
How to Support Customer Segmentation with Useful Cluster Descriptions.  
ICDM 2015: 17-31
43. Kaspar Riesen, Miquel Ferrer, Andreas Fischer:  
Building Classifier Ensembles Using Greedy Graph Edit Distance.  
MCS 2015: 125-134
44. Kaspar Riesen, Miquel Ferrer, Horst Bunke:  
Suboptimal Graph Edit Distance Based on Sorted Local Assignments.  
MCS 2015: 147-156
45. Kaspar Riesen, Miquel Ferrer, Rolf Dornberger, Horst Bunke:  
Greedy Graph Edit Distance.  
MLDM 2015: 3-16
46. Miquel Ferrer, Francesc Serratosa, Kaspar Riesen:  
Learning Heuristics to Reduce the Overestimation of Bipartite Graph Edit Distance

- Approximation.  
MLDM 2015: 17-31
47. Kaspar Riesen, Andreas Fischer, Horst Bunke:  
Combining Bipartite Graph Matching and Beam Search for Graph Edit Distance Approximation.  
ANNPR 2014: 117-128
48. Kaspar Riesen, Andreas Fischer, Horst Bunke:  
Computing Upper and Lower Bounds of Graph Edit Distance in Cubic Time.  
ANNPR 2014: 129-140
49. Kaspar Riesen, Rolf Dornberger, Horst Bunke:  
Iterative Bipartite Graph Edit Distance Approximation.  
Document Analysis Systems 2014: 61-65
50. Kaspar Riesen, Darko Brodic, Zoran N. Milivojevic, Cedomir A. Maluckov:  
Graph Based Keyword Spotting in Medieval Slavic Documents - A Project Outline.  
EuroMed 2014: 724-731
51. Kaspar Riesen, Horst Bunke:  
Improving Approximate Graph Edit Distance by Means of a Greedy Swap Strategy.  
ICISP 2014: 314-321
52. Kaspar Riesen, Horst Bunke, Andreas Fischer:  
Improving Graph Edit Distance Approximation by Centrality Measures.  
ICPR 2014: 3910-3914
53. Kaspar Riesen, Andreas Fischer, Horst Bunke:  
Improving Approximate Graph Edit Distance Using Genetic Algorithms.  
S+SSPR 2014: 63-72
54. Benoit Gaüzère, Sébastien Bougleux, Kaspar Riesen, Luc Brun:  
Approximate Graph Edit Distance Guided by Bipartite Matching of Bags of Walks.  
S+SSPR 2014: 73-82
55. Andreas Fischer, Réjean Plamondon, Yvon Savaria, Kaspar Riesen, Horst Bunke:  
A Hausdorff Heuristic for Efficient Computation of Graph Edit Distance.  
S+SSPR 2014: 83-92
56. Kaspar Riesen, Sandro Emmenegger, Horst Bunke:  
A Novel Software Toolkit for Graph Edit Distance Computation.  
GbRPR 2013: 142-151
57. Andreas Fischer, Ching Y. Suen, Volkmar Frinken, Kaspar Riesen, Horst Bunke:  
A Fast Matching Algorithm for Graph-Based Handwriting Recognition.  
GbRPR 2013: 194-203
58. Stefan Fankhauser, Kaspar Riesen, Horst Bunke:  
Speeding Up Graph Edit Distance Computation through Fast Bipartite Matching.  
GbRPR 2011: 102-111
59. Andreas Fischer, Kaspar Riesen, Horst Bunke:  
Graph Similarity Features for HMM-Based Handwriting Recognition in Historical



Documents.

ICFHR 2010: 253-258

60. Jonas Richiardi, Dimitri Van De Ville, Kaspar Riesen, Horst Bunke:  
Vector Space Embedding of Undirected Graphs with Fixed-cardinality Vertex Sequences for Classification.  
ICPR 2010: 902-905
61. Kaspar Riesen, Horst Bunke:  
Feature Ranking Algorithms for Improving Classification of Vector Space Embedded Graphs.  
CAIP 2009: 377-384
62. Kaspar Riesen, Stefan Fankhauser, Horst Bunke, Peter J. Dickinson:  
Efficient Suboptimal Graph Isomorphism.  
GbRPR 2009: 124-133
63. Kaspar Riesen, Volkmar Frinken, Horst Bunke:  
Improving Graph Classification by Isomap.  
GbRPR 2009: 205-214
64. Kaspar Riesen, Horst Bunke:  
Cluster Ensembles Based on Vector Space Embeddings of Graphs.  
MCS 2009: 211-221
65. Kaspar Riesen, Horst Bunke:  
Dissimilarity Based Vector Space Embedding of Graphs Using Prototype Reduction Schemes.  
MLDM 2009: 617-631
66. Kaspar Riesen, Horst Bunke:  
Kernel k-Means Clustering Applied to Vector Space Embeddings of Graphs.  
ANNPR 2008: 24-35
67. Miquel Ferrer, Ernest Valveny, Francesc Serratosa, Kaspar Riesen, Horst Bunke:  
An approximate algorithm for median graph computation using graph embedding.  
ICPR 2008: 1-4
68. Andreas Fischer, Kaspar Riesen, Horst Bunke:  
An experimental study of graph classification using prototype selection.  
ICPR 2008: 1-4
69. Alexandra Brügger, Horst Bunke, Peter J. Dickinson, Kaspar Riesen:  
Generalized Graph Matching for Data Mining and Information Retrieval.  
ICDM 2008: 298-312
70. Kaspar Riesen, Horst Bunke:  
On Lipschitz Embeddings of Graphs.  
KES (1) 2008: 131-140
71. Horst Bunke, Kaspar Riesen:  
Recent Developments in Graph Classification and Clustering using Graph Embedding Kernels.  
PRIS 2008: 3-13

72. Kaspar Riesen, Horst Bunke:  
Non-linear Transformations of Vector Space Embedded Graphs.  
PRIS 2008: 173-183
73. Horst Bunke, Kaspar Riesen:  
Graph Classification on Dissimilarity Space Embedding.  
SSPR/SPR 2008: 2
74. Kaspar Riesen, Horst Bunke:  
IAM Graph Database Repository for Graph Based Pattern Recognition and Machine Learning.  
SSPR/SPR 2008: 287-297
75. Horst Bunke, Kaspar Riesen:  
Graph Classification Based on Dissimilarity Space Embedding.  
SSPR/SPR 2008: 996-1007
76. Horst Bunke, Kaspar Riesen:  
A Family of Novel Graph Kernels for Structural Pattern Recognition.  
CIARP 2007: 20-31
77. Kaspar Riesen, Michel Neuhaus, Horst Bunke:  
Bipartite Graph Matching for Computing the Edit Distance of Graphs.  
GbRPR 2007: 1-12
78. Kaspar Riesen, Michel Neuhaus, Horst Bunke:  
Graph Embedding in Vector Spaces by Means of Prototype Selection.  
GbRPR 2007: 383-393
79. Kaspar Riesen, Horst Bunke:  
Structural Classifier Ensembles for Vector Space Embedded Graphs.  
IJCNN 2007: 1500-1505
80. Kaspar Riesen, Horst Bunke:  
Classifier Ensembles for Vector Space Embedding of Graphs.  
MCS 2007: 220-230
81. Kaspar Riesen, Vivian Kilchherr, Horst Bunke:  
Reducing the Dimensionality of Vector Space Embeddings of Graphs.  
MLDM 2007: 563-573
82. Kaspar Riesen, Stefan Fankhauser, Horst Bunke:  
Speeding Up Graph Edit Distance Computation with a Bipartite Heuristic.  
MLG 2007
83. Michel Neuhaus, Kaspar Riesen, Horst Bunke:  
Fast Suboptimal Algorithms for the Computation of Graph Edit Distance.  
SSPR/SPR 2006: 163-172

## 5. Patents and Licenses

1. Kaspar Riesen, Roman Schmidt:  
Method and apparatus for determining a similarity measure between drawings.  
European Patent EP16161706.3 (2019)

## 6. Other Publications

1. [histograph.ch](http://histograph.ch):  
Graph benchmark data sets for keyword spotting in historical documents.
2. IAM Graph Database:  
Several standardized graph data sets for benchmarking covering a wide spectrum of different applications.