

Curriculum Vitae

Full Name: Dr. Stefan Jaeger (Jäger)
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Research Interests:

Image Processing, Computational Biology, Pattern Recognition, Machine Learning, Information Theory, Information Retrieval, Artificial Intelligence, Sensor Fusion, Human-Computer Interaction, Optimization.

Education:

1998 PhD, Computer Science (University of Freiburg, Germany)
1994 Diploma (MSc equivalent), Computer Science (German Research Center for Artificial Intelligence (DFKI), University of Kaiserslautern, Germany)

Research Experience:

Since Sep. 2007 Research Associate, CAS-MPG Partner Institute for Computational Biology, Chinese Academy of Sciences and Max Planck Society, Shanghai, China
Sep. 2003 – Apr. 2007 Research Associate, Institute for Advanced Computer Studies (UMIACS), University of Maryland, College Park, USA
Nov. 2000 – Mar. 2003 NEDO Research Fellow (New Energy and Industrial Technology Development Organization), Department of Computer Science, Tokyo University of Technology & Agriculture, Tokyo, Japan
Feb. 1998 – Sep. 2000 Research Staff, Interactive Systems Labs, University of Karlsruhe, Germany, and Carnegie Mellon University, Pittsburgh, USA
Jun. 1994 – Feb. 1998 Daimler-Benz Graduate Fellow, Daimler-Benz Research Center, Ulm, Germany

Principal Investigator:

- License Agreement with IBM, University of Maryland, USA, 2005-2006
- DOCLIB: Document Processing Library, University of Maryland, USA, 2004-2006
- GEHA: Handwriting Recognition Project, Daimler-Benz Research Center, Germany, 1994-1997

Professional Honors:

- Research Fellowship:
New Energy and Industrial Technology Development Organization (NEDO), Japan, Nov. 2000 – Mar. 2003
- Research Awards and Nominations:
 - IAPR/ICDAR Young Investigator Award Nomination: International Association of Pattern Recognition / International Conference on Document Analysis and Recognition, 2007.
 - Best Student Paper: International Workshop on Frontiers in Handwriting Recognition (IWFHR), La Baule, France: Y. Li, Y. Zheng, D. Doermann, S. Jaeger. A New Algorithm for Detecting Text Line in Handwritten Documents, 2006.
 - Best Paper Nomination: International Conference on Document Analysis and Recognition (ICDAR), Seoul, Korea: S. Jaeger, H. Ma, D. Doermann. Identifying Script on Word-Level with Informational Confidence, 2005.
 - Ph.D. Thesis Award: German Research Centers for Artificial Intelligence, 1999.

- Editorial Board Member:
 - Electronic Letters on Computer Vision and Image Analysis (ELCVIA)
- Conference Chair:
 - Workshop on Video Data Mining and Knowledge Discovery for Biological Sciences, Chinese Academy of Sciences, Max-Planck Society, Shanghai, China, December 2007.
 - Summit on Arabic and Chinese Handwriting (SACH'06), University of Maryland, College Park, USA, September 2006.
- Reviewer:
 - Project Reviewer, State of Qatar's National Priorities Research Program
 - IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI)
 - Pattern Recognition
 - ACM Transactions on Applied Perception
 - International Journal on Document Analysis and Recognition (IJ DAR)
 - IEE Proceedings – Vision, Image, and Signal Processing (IEEVISP)
- Program Committee Member:
 - International Symposium on Signal Processing and its Applications (ISSPA-2007)
 - International Conference on Graphics and Visualization in Engineering (GVE-2007)
 - International Conference on Visualization, Imaging, and Image Processing (VIIP-2006, VIIP-2007)
 - International Conference on Frontiers in Handwriting Recognition (IWFHR-2002, IWFHR-2004, IWFHR-2006, ICFHR-2008)
 - International Conference on Document Analysis and Recognition (ICDAR-2007, ICDAR-2009)

Publications:

Recent publications at University of Maryland, including abstracts and electronic files, are available under

<http://lamprv01.umiacs.umd.edu/pubs/search.php?submit=1&table=publications&field1=author&query1=jaeger>

The following is a list of selected publications:

Books and Book Chapters:

- Stefan Jaeger and David Doermann (Editors), Arabic and Chinese Handwriting Recognition, Lecture Notes in Computer Science, Springer, 2008.
- Stefan Jaeger, Huanfeng Ma, David Doermann. Combining Classifiers with Informational Confidence, In: Machine Learning in Document Analysis and Recognition, Editors: Simone Marinai, Hiromichi Fujisawa, Studies in Computational Intelligence, Springer, pages 163-192, 2008.
- Sergey Tuljakov, Stefan Jaeger, Venu Govindaraju, David Doermann. Review of Classifier Combination Methods, In: Machine Learning in Document Analysis and Recognition, Editors: Simone Marinai, Hiromichi Fujisawa, Studies in Computational Intelligence, Springer, pages 361-386, 2008.
- Stefan Jaeger. Recovering Dynamic Information from Static, Handwritten Word Images, Dissertation, University of Freiburg, ISBN 3-923532-80-6, 1998.

Journals:

- Stefan Jaeger and Su-Shing Chen, Information Fusion for Biological Prediction, Journal of Data Science, 2008.
- Guangyu Zhu, Yefeng Zheng, David Doermann, Stefan Jaeger. Signature Detection and Matching for Document Image Retrieval, IEEE Transactions on Pattern Analysis and Machine Intelligence, 2008.

- Yi Li, Yefeng Zheng, David Doermann, Stefan Jaeger. Script-Independent Text Line Segmentation in Freestyle Handwritten Documents, IEEE Transactions on Pattern Analysis and Machine Intelligence, volume 30, number 8, pages 1313-1329, 2008.
- C.-L. Liu, S. Jaeger, M. Nakagawa. Online Recognition of Chinese Characters: The State-of-the-Art, IEEE Transactions on Pattern Analysis and Machine Intelligence, volume 26, number 2, pages 198-213, 2004.
- S. Jaeger, M. Nakagawa, C.-L. Liu. The State of the Art in Japanese Online Handwriting Recognition Compared to Techniques in Western Handwriting Recognition. International Journal on Document Analysis and Recognition, volume 6, number 2, pages 75-88, 2003.
- S. Jaeger, S. Manke, J. Reichert, A. Waibel. On-Line Handwriting Recognition: The Npen++ Recognizer. International Journal on Document Analysis and Recognition, volume 3, number 3, pages 169-181, 2001.
- S. Jaeger. Rekonstruktion von Schriftzuegen aus handgeschriebenen Woertern (German Journal on Artificial Intelligence, in German). In KI 2, 1999.

Conferences (computer science, peer reviewed):

- Guangyu Zhu, Yefeng Zheng, David Doermann, Stefan Jaeger. Multi-scale Structural Saliency for Signature Detection. IEEE Conference on Computer Vision and Pattern Recognition (CVPR 2007), pages 1-8, Minneapolis (USA), 2007.
- Stefan Jaeger. From Informational Confidence to Informational Intelligence. 10th International Workshop on Frontiers in Handwriting Recognition, pages 173-178, La Baule (France), 2006.
- Yi Li, Yefeng Zheng, David Doermann, Stefan Jaeger. A New Algorithm for Detecting Text Line in Handwritten Documents. 10th International Workshop on Frontiers in Handwriting Recognition, pages 35-40, La Baule (France), 2006.
- Stefan Jaeger, Guangyu Zhu, David Doermann, Kevin Chen, Summit Sampat. DOCLIB: a Software Library for Document Processing. Proceedings of International Conference on Document Recognition and Retrieval (IS&T, SPIE), January 2006. (San Jose).
- Guangyu Zhu, Stefan Jaeger, David Doermann. A Robust Stamp Detection Framework on Degraded Documents. International Conference on Document Recognition and Retrieval (IS&T, SPIE), January 2006.
- Kevin Chen, Stefan Jaeger, Guangyu Zhu, David Doermann. DOCLIB: a document processing research tool. Symposium on Document Image Understanding Technology, University of Maryland, pages 159-163, 2005.
- S. Jaeger, H. Ma, D. Doermann. Identifying Script on Word-Level with Informational Confidence, 8th Int. Conf. on Document Analysis and Recognition, pages 416-420, 2005.
- S. Jaeger, Informational Classifier Fusion, 17th Int. Conf. on Pattern Recognition (Cambridge, UK), pages 216-219, 2004.
- S. Jaeger. Using Informational Confidence Values for Classifier Combination: An Experiment with Combined On-Line/Off-Line Japanese Character Recognition. 9th Int. Workshop on Frontiers in Handwriting Recognition, pages 87-92, 2004.
- S. Jaeger, M. Nakagawa. The Callpaper Concept : Turning Paper Into Computer Terminals, 7th International Conference on Document Analysis and Recognition (ICDAR), pages 1065-1069, Edinburgh (UK), 2003.
- S. Jaeger, M. Nakagawa, H. Hild, R. Wolff, G. Wojke. Dynamic Generation of Multi-Modal Crosswords in Web Documents, 2nd International Workshop on Web Document Analysis (WDA), pages 39-42, Edinburgh (UK), 2003.
- O. Velek, S. Jaeger, M. Nakagawa. Accumulated Recognition Rate Normalization for Combining Multiple On/Off-Line Japanese Character Classifiers Tested on a Large Database. 4th International Workshop on Multiple Classifier Systems, pages 196-205, Guildford (UK), 2003.
- S. Jaeger, M. Nakagawa, C.-L. Liu. Comparing On-Line Recognition of Japanese and Western Script in Preparation for Recognizing Multi-Language Documents. 8th International Workshop on Frontiers in Handwriting Recognition, pages 84-89, Niagara-on-the Lake (Canada), 2002.
- O. Velek, S. Jaeger, M. Nakagawa. A New Warping Technique for Normalizing Likelihood of Multiple Classifiers and its Effectiveness in Combined On-Line/Off-Line Japanese Character Recognition. 8th International Workshop on Frontiers in Handwriting Recognition, pages 177-182, Niagara-on-the Lake (Canada), 2002.

- O. Velek, C.-L. Liu, S. Jaeger, M. Nakagawa. An Improved Approach to Generating Realistic Kanji Character Images from On-Line Characters and its Benefit to Off-Line Recognition Performance. 16th International Conference on Pattern Recognition, volume I, pages 588-591, Quebec (Canada), 2002.
- S. Jaeger, M. Nakagawa, C.-L. Liu. A Brief Survey on the State of the Art in On-Line Handwriting Recognition for Japanese and Western Script. IEICE Conference on Pattern Recognition and Media Understanding, pages 1-8, Japan, March 2002.
- S. Jaeger, M. Nakagawa. Two On-Line Japanese Character Databases in Unipen Format. Sixth International Conference on Document Analysis and Recognition, pages 566-570, Seattle, 2001.
- S. Jaeger. On the Complexity of Cognition. 7th International Workshop on Frontiers in Handwriting Recognition, pages 291-302, Amsterdam, 2000.
- S. Jaeger, S. Manke, A. Waibel. Npen++: An On-Line Handwriting Recognition System. 7th International Workshop on Frontiers in Handwriting Recognition, pages 249-260, Amsterdam, 2000.
- S. Jaeger. Recognizing Handwritten Words by Recovering Pen Movements. Contribution to the Second Conference on Perception, published by H. Buelthoff, M. Fahle, R. Gegenfurtner, and A. Mallot, Tuebingen, 1999.
- S. Jaeger. Motor Control, Curvature Minimization, and the Traveling Salesman. 8th Biennial Conference of the International Graphonomics Society, edited by A. Colla, F. Masulli, and P. Morasso, Genova, 1997.
- S. Jaeger. A Psychomotor Method for Tracking Handwriting. 4th International Conference on Document Analysis and Recognition, pages 528-531, Ulm, 1997.
- S. Jaeger. Recovering Writing Traces in Off-Line Handwriting Recognition: Using a Global Optimization Technique. 13th International Conference on Pattern Recognition, volume C, pages 150-154, Vienna, 1996.

Patents:

- Interactive Learning Crossword with Integrated Handwriting Recognition (German Patent 20014722, 2002).
- A Method for Recovering Dynamic Information from Static Handwriting (German Patent DE19615211A, 1997).

Others:

- Stefan Jaeger. Solving the P/NP Problem under Intrinsic Uncertainty, November 2008, <http://arxiv.org/abs/0811.0463v2>
- Stefan Jaeger. Entropy, Perception, and Relativity. Technical Report: LAMP-TR-131/CS-TR-4799/UMIACS-TR-2006-20/CAR-TR-1012, University of Maryland, College Park, April 2006, <http://arxiv.org/abs/0811.0139>
- Yi Li, Yefeng Zheng, David Doermann, Stefan Jaeger. Script-Independent Text Line Segmentation in Freestyle Handwritten Documents. Technical Report: LAMP-TR-136/CS-TR-4836/UMIACS-TR-2006-51/CFAR-TR-1017, University of Maryland, College Park, November 2006.
- Stefan Jaeger. Uncertainty in Neural and Physical Processes, Technical Report: LAMP-TR-137/CS-TR-4841/UMIACS-TR-2006-56/CAR-TR-1016, University of Maryland, College Park, November 2006.
- Stefan Jaeger. Recovering Trajectories in Off-Line Handwriting Recognition (in German). Statusseminar Bioinformatik, published by *Projekttraeger Informationstechnik* of BMBF at DLR, pages 339-342, 1995.
- Stefan Jaeger. NN-Classifiers in Handwriting Recognition (in German). Diploma Thesis, University of Kaiserslautern, 1994.

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