

# Dr. Streichert, Felix



## Background

- 1994 - 1995 study of physics at the [Georg - August - University of Göttingen](#)
- 1995 - 2001 study of technical cybernetics at the [University of Stuttgart](#)
- 1999 thesis "*Konzeption und Implementierung von Modellierungsalgorithmen für polygonale Geometrien in immersiven VR-Systemen*" ([description](#)) at the Institut für Arbeitswissenschaft und Technologiemanagement (IAT)
- 2000 internship at [OMROM](#) in Ayabe, Japan
- 2001 internship and master thesis "*Evolutionäre Algorithmen und ihre Anwendung im Asset Managementbereich*" at [Commerzbank](#) in Frankfurt
- 2001-2006 research assistant at the Dept. of Computer Architecture, Eberhard-Karls-University Tübingen
- 2006 research fellowship at the [Tottori University](#), Japan, financed by the [Canon Foundation Europe](#)

## Research Interests

- Evolutionary Algorithms
- Artificial Embryology

## Terminated Projects

- direct cooperation with [Altana Pharma](#)
- BMBF-Project "Automatisierte Kristallisation"

## PhD Thesis

*Evolutionary Algorithms in Multi-Modal and Multi-Objective Environments*

F. Streichert

Logos Verlag Berlin, ISBN 978-3832515522, 2007

Available in english at [Amazon](#)

## Publications

*A New Scheme for Interactive Multi-Criteria Decision Making*

F. Streichert, and M. Tanaka-Yamawaki

10th International Conference on Knowledge Based and Intelligent Information and Engineering Systems (KES)

Bournemouth, England, 9-11 October, 2006. LNAI, vol. 4253, pp. 655-667, Springer

*Effect of Moving Averages in the Tickwise Tradings in the Stock Market*

F. Streichert, M. Tanaka-Yamawaki, and M. Iwata

10th International Conference on Knowledge Based and Intelligent Information and Engineering Systems (KES)

Bournemouth, England, 9-11 October, 2006. LNAI, vol. 4253, pp. 647-654, Springer

*An Automatic Approach to Online Color Training in RoboCup Environments*

P. Heinemann, F. Sehnke, F. Streichert, and A. Zell

IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)

Beijing, China, 9-15 October, 2006. Proceedings, pp. 4880-4885, IEEE, ISBN: 1-4244-0259-X

*A Memetic Algorithm on the Constrained Portfolio Selection Problem*

F. Streichert, and M. Tanaka-Yamawaki

Cooperative Research Report, Institute of Statistical Mathematics, 187, pp.140-149, 2006

- Automatic Calibration of Camera to World Mapping in RoboCup using Evolutionary Algorithms*  
P. Heinemann, F. Sehnke, F. Streichert, and A. Zell  
IEEE International Congress on Evolutionary Computing (CEC 2006)  
Vancouver, Canada, 16-21 July, 2006. Proceedings, pp. 1316-1323, ACM Press
- The Effect of Local Search on the Constrained Portfolio Selection Problem*  
F. Streichert, and M. Tanaka-Yamawaki  
IEEE International Congress on Evolutionary Computing (CEC 2006)  
Vancouver, Canada, 16-21 July, 2006. Proceedings, pp. 2368-2374, ACM Press
- Comparing Mathematical Models on the Problem of Network Inference*  
C. Spieth, N. Hassis, F. Streichert, J. Supper, N. Speer, K. Beyreuther, and A. Zell  
Genetic and Evolutionary Computation Conference - GECCO 2004,  
Seattle, Washington, USA, 8-12 July, 2006. Proceedings, pp. 279-286, ACM Press
- Comparing Evolutionary Algorithms on the Problem of Network Inference*  
C. Spieth, R. Worzischek, F. Streichert, J. Supper, N. Speer, and A. Zell  
Genetic and Evolutionary Computation Conference - GECCO 2004,  
Seattle, Washington, USA, 8-12 July, 2006. Proceedings, pp. 305 - 306, ACM Press
- Towards a Calibration-Free Robot: The ACT Algorithm for Automatic Online Color Training*  
P. Heinemann, F. Sehnke, F. Streichert, and A. Zell  
In RoboCup 2006: Robot Soccer World Cup X, Springer, 2007.
- Hybrid Representation for Compositional Optimization and Parallelizing MOEAs*  
F. Streichert, H. Ulmer, and A. Zell  
Dagstuhl Seminar Proceedings (04461) on Practical Approaches to Multi-Objective  
Optimization  
[\[pdf\]](#)
- Predicting Single Genes Related to Immune-Relevant Processes*  
C. Spieth, F. Streichert, N. Speer, C. Sinzger, K. Eberhard, and A. Zell  
IEEE Symposium on Computational Intelligence in Bioinformatics and Computational  
Biology (CIBCB)  
San Diego, USA, 2006. Proceedings, pp. 461-468, IEEE press
- Feedback Memetic Algorithms for Modeling Gene Regulatory Networks*  
C. Spieth, F. Streichert, J. Supper, N. Speer, and A. Zell  
IEEE Symposium on Computational Intelligence in Bioinformatics and Computational  
Biology (CIBCB)  
San Diego, USA, 2006. Proceedings, pp. 61-67, IEEE press
- Inferring Regulatory Systems with Noisy Pathway Information*  
C. Spieth, F. Streichert, N. Speer, and A. Zell  
German Conference on Bioinformatics (GCB)  
Hamburg, Germany, 2006. LNI, vol. P-71, pp. 193-203, GI
- Clustering Based Approach to Identify Solutions for the Inference of Regulatory Networks*  
C. Spieth, F. Streichert, N. Speer, and A. Zell  
IEEE Congress on Evolutionary Computation (CEC),  
Edinburgh, UK, 2006. Proceedings, vol. 1, pp. 660-667, IEEE Press
- Model-based Shape Analysis of Gas Concentration Gridmaps for Improved Gas Source  
Localisation*  
A. Lilienthal, F. Streichert, and A. Zell  
IEEE International Conference on Robotics and Automation (ICRA)  
Barcelona, Spain, April 18 - 22, 2005. Proceedings, pp. 3575-3580, 2005  
Abstract: [\[pdf\]](#)
- Parallelization of Multi-Objective Evolutionary Algorithms using Clustering Algorithms*  
F. Streichert, H. Ulmer, and A. Zell  
Conference on Evolutionary Multi-Criterion Optimization (EMO)  
Guanajuato, Mexico, 2005. LNCS 3410, pp. 92-107, 2005, Springer-Verlag

*Multi-Objective Model Optimization for Inferring Gene Regulatory Networks*

C. Spieth, F. Streichert, N. Speer, and A. Zell  
Conference on Evolutionary Multi-Criterion Optimization (EMO)  
Guanajuato, Mexico, 2005. LNCS 3410, pp. 607-620, 2005, Springer-Verlag

*Comparing Discrete and Continuous Genotypes on the Constrained Portfolio Selection Problem*

F. Streichert, H. Ulmer, and A. Zell  
Genetic and Evolutionary Computation Conference - GECCO 2004,  
Seattle, WA, USA, June 26-30, 2004, Proceedings, Part II. pp. 1239-1250, © Springer-Verlag (LNCS 3103), ISBN 3-540-22343-6

*Optimizing Topology and Parameters of Gene Regulatory Network Models from Time-Series Experiments*

C. Spieth, F. Streichert, N. Speer, and A. Zell  
Genetic and Evolutionary Computation Conference - GECCO 2004,  
Seattle, WA, USA, June 26-30, 2004, Proceedings, Part I. pp. 461-470, © Springer-Verlag (LNCS 3102), ISBN 3-540-22344-4

*Comparing Genetic Programming and Evolution Strategies on Inferring Gene Regulatory Networks*

F. Streichert, H. Planatscher, C. Spieth, H. Ulmer, and A. Zell  
Genetic and Evolutionary Computation Conference - GECCO 2004,  
Seattle, WA, USA, June 26-30, 2004, Proceedings, Part I. pp. 471-480, © Springer-Verlag (LNCS 3102), ISBN 3-540-22344-4

*How to evolve the Head-Tail Pattern from Reaction-Diffusion Systems*

F. Streichert, C. Spieth, H. Ulmer, and A. Zell  
Proceedings of the 2004 NASA/DoD Conference on Evolvable Hardware  
Seattle, WA, USA, June 24-26, 2004, Proceedings pp. 261-268, IEEE Press, ISBN 0-7695-2145-2

*Evaluating a Hybrid Encoding and Three Crossover Operators on the Constrained Portfolio Selection Problem*

F. Streichert, H. Ulmer, and A. Zell  
Congress on Evolutionary Computation (CEC 2004)  
Portland, OR, USA, June 19-23, 2004, Proceedings Part I pp. 932-939, IEEE Press, ISBN 0-7803-8515-2

*A Memetic Inference Method for Gene Regulatory Networks Based on S-Systems*

C. Spieth, F. Streichert, N. Speer, and A. Zell  
Congress on Evolutionary Computation (CEC 2004)  
Portland, OR, USA, June 19-23, 2004, Proceedings Part I pp. 152-157, IEEE Press, ISBN 0-7803-8515-2

*Utilizing an Island Model for EA to Preserve Solution Diversity for Inferring Gene Regulatory Networks*

C. Spieth, F. Streichert, N. Speer, and A. Zell  
Congress on Evolutionary Computation (CEC 2004)  
Portland, OR, USA, June 19-23, 2004, Proceedings Part I pp. 146-151, IEEE Press, ISBN 0-7803-8515-2

*Evolution Strategies with Controlled Model Assistance*

H. Ulmer, F. Streichert, and A. Zell  
Congress on Evolutionary Computation (CEC 2004)  
Portland, OR, USA, June 19-23, 2004, Proceedings Part II pp. 1569-1576, IEEE Press, ISBN 0-7803-8515-2

*Iteratively Inferring Gene Regulatory Networks with Virtual Knockout Experiments*

C. Spieth, F. Streichert, N. Speer and A. Zell  
Proceedings of the 2nd European Workshop on Evolutionary Bioinformatics (evoBIO)  
Applications of Evolutionary Computing: EvoWorkshops2004, LNCS, vol. 3005, pp. 102-111

*Evolution Strategies assisted by Gaussian Processes with improved Pre-Selection Criterion*

H. Ulmer, F. Streichert, and A. Zell

Congress on Evolutionary Computation, CEC 2003,  
Canberra, Australia, December 8-12, 2003, Proceedings, Part I. pp. 692-699, IEEE-Press,  
ISBN 0-7803-7804-0

*A Clustering Based Niching EA for Multimodal Search Spaces*

F. Streichert, G. Stein, H. Ulmer, and A. Zell  
Evolution Artificielle 6th International Conference (EA 2003)  
Marseille, France, October 27-30, 2003, Proceedings pp. 169-180, ISBN 2-72261-12667-8  
Evolution Artificielle, pp. 293-304, © Springer-Verlag (LNCS 2936), ISBN 3-540-21523-9

*Evolutionary Algorithms and the Cardinality Constrained Portfolio Selection Problem*

F. Streichert, H. Ulmer, and A. Zell  
Selected Papers of the International Conference on Operations Research (OR 2003)  
Heidelberg, Germany, September 3-5, 2003, pp. 253-260, Springer, ISBN 3-540-21445-3

*Optimization by Gaussian Processes Assisted Evolution Strategies*

H. Ulmer, F. Streichert, and A. Zell  
Selected Papers of the International Conference on Operations Research (OR 2003)  
Heidelberg, September 3-5, 2003, pp. 435-442, Springer, ISBN 3-540-21445-3

*Evolving the Ability of Limited Growth and Self-Repair for Artificial Embryos*

F. Streichert, C. Spieth, H. Ulmer, and A. Zell  
Advances in Artificial Life - Proceedings of the 7th European Conference on Artificial Life  
(ECAL)  
Dortmund, Germany, September 14-17, 2003, Proceedings pp. 289-298, © Springer-Verlag  
(LNAI 2801), ISBN 3-540-20057-6

*Model-Assisted Steady-State Evolution Strategies*

H. Ulmer, F. Streichert, and A. Zell  
Genetic and Evolutionary Computation Conference - GECCO 2003,  
Chicago, IL, USA, July 12-16, 2003. Proceedings, Part I. pp. 610-621, © Springer-Verlag  
(LNCS 2723), ISBN 3-540-40602-6

## Posters

*Identifying Valid Solutions for the Inference of Regulatory Networks*

C. Spieth, F. Streichert, N. Speer, and A. Zell  
Genetic and Evolutionary Computation Conference (GECCO 2005), Washington DC, USA  
Proceedings, pp. 469-471, ACM Press

*A Clustering Based Niching Method for Evolutionary Algorithms*

F. Streichert, G. Stein, H. Ulmer, and A. Zell  
Genetic and Evolutionary Computation Conference - GECCO 2003,  
Chicago, IL, USA, July 12-16, 2003. Proceedings, Part I. pp. 644-645, © Springer-Verlag  
(LNCS 2723), ISBN 3-540-40602-6

## Book Chapters

*Model Assisted Evolution Strategies*

H. Ulmer, F. Streichert, and A. Zell  
in "[Knowledge Incorporation in Evolutionary Computation](#)", in Studies in Fuzziness and  
Soft Computing Series, J. Yaochu (Ed.)  
Chapter 16, pp. 333-358, Springer, ISBN 3-540-22902-7, 2004.

## Presentations

*Multi-Objective Evolutionary Algorithms on the Portfolio Selection Problem*

F. Streichert  
presented at the [International Workshop on Multi-Attribute Portfolio Selection](#), Helsinki,  
Finland, March 13-15, 2005

*Hybrid Representations for Composition Optimization and Parallelizing MOEAs*

F. Streichert

presented at the [Dagstuhl seminar](#) on Practical Approaches to Multi-Objective Optimization, November 07-12, 2004

*Nischenbildung für Evolutionäre Algorithmen basierend auf Cluster Algorithmen*

F. Streichert

presented at the [Collaborative Research Center SFB 531](#) of the University Dortmund, April 26, 2004

*Introduction to Evolutionary Algorithms*

F. Streichert

presented at the [Frankfurt MathFinance Workshop](#), April 2-4, 2002

## Awards

*doIT Award 2004*

for JavaEvA - a Java based framework for Evolutionary Algorithms

2nd price endowed with 10,000 €

[doIT Software-Award & doIT Software-Forschungstag](#) (German only)

*IVS-Award 2000*

for best students thesis "*Konzeption und Implementierung von Modellierungsalgorithmen für polygonale Geometrien in immersiven VR-Systemen*"

1st price endowed with 500 €

## Misc

*Wissenschaftler in Japan: Felix Streichert*

Wissenschaft und Technologie in Japan, No. 39, April 2006

<http://www.de.emb-japan.go.jp/presse/Ausgabe%2039-2006-04.pdf>

*JavaEvA - Java-Softwarepaket für Evolutionäre Algorithmen*

F. Streichert, H. Ulmer and A. Zell

Aktuelle Trends in der Softwareforschung

Tagungsband zum doIT Software-Forschungstag 2004, pp.40-51, 2005, ISBN 3-8167-6715-X

*JavaEvA - A Java based framework for Evolutionary Algorithms*

F. Streichert and H. Ulmer

Technical Report: WSI-2005-06, Universitätsbibliothek Tübingen, 2005

URN: urn:nbn:de:bsz:21-opus-17001

<http://w210.ub.uni-tuebingen.de/dbt/volltexte/2005/1702>

*Do-IT-Award würdigt Plattformsdesigns*

Computerzeitung Nr.45/2, page 8, Nov. 2004

## Diploma Thesis

*Evolutionäre Algorithmen und ihre Anwendung im Asset Managementbereich  
(Evolutionary Algorithms and their Application to Asset Management)*

F. Streichert, Diplomarbeit

at the [Institut A für Mechanik](#) at the University Stuttgart, 2001.



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