Dr. Marcel Kronfeld

Background

- 1989-1998: Hans und Sophie Scholl Gymnasium (high school), Ulm
- 1999-2006: Studies of Computer Science, University of Tübingen
- 8/2006: Diploma Thesis, Computer Networks & Internet group, Prof. Dr. Georg Carle, University of Tübingen
- since 10/2006: Research assistant, Computer Architecture/ZBIT group, Prof. Dr. Andreas Zell, University of Tübingen

Research Interests

- Evolutionary Algorithms and Machine Learning
- Human-Machine Interaction, Human-Robot Interaction
- Multi-Agent Systems and Complex Nonlinear Systems
- Self-Organization, Artificial Life and Artificial Societies

Current Projects

- *Evolutionary Optimization in Dynamic Environments with EvA2*

Publications

[1] Marius Hofmeister, Marcel Kronfeld, and Andreas Zell. Cooperative visual mapping in a heterogeneous team of mobile robots. In *IEEE International Conference on Robotics and Automation (ICRA)*, pages 1491--1496, Shanghai, China, May 2011.

[2] Marius Hofmeister and Marcel Kronfeld. Multi-robot coverage considering line-of-sight conditions. In *7th IFAC Symposium on Intelligent Autonomous Vehicles (IAV)*, Lecce, Italy, September 2010.

[3] Marcel Kronfeld and Andreas Zell. Towards scalability in niching methods. In *Proceedings of the IEEE Congress on Evolutionary Computation (CEC)*, pages 4409--4416, Barcelona, Spain, July 2010.

[4] Marcel Kronfeld, Christian Weiss, and Andreas Zell. Swarm-supported outdoor localization with sparse visual data. *Robotics and Autonomous Systems. Selected papers from the 2007 European Conference on Mobile Robots (ECMR 2007)*, 58(2):166--173, February 2010. [DOI | link]

[5] Marcel Kronfeld, Hannes Planatscher, and Andreas Zell. The EvA2 optimization framework. In Christian Blum and Roberto Battiti, editors, *Learning and Intelligent Optimization Conference, Special Session on Software for Optimization (LION-SWOP)*, number 6073 in Lecture Notes in Computer Science, LNCS, pages 247--250, Venice, Italy, January 2010. Springer Verlag.

[6] Marcel Kronfeld and Andreas Zell. Gaussian process assisted particle swarm optimization. In Christian Blum and Roberto Battiti, editors, *Learning and Intelligent Optimization Conference (LION IV)*, number 6073 in Lecture Notes in Computer Science, LNCS, pages 139--153, Venice, Italy, January 2010. Springer Verlag.

[7] Clemens Wrzodek, Adrian Schröder, Andreas Dräger, Dierk Wanke, Kenneth W. Berendzen, Marcel Kronfeld, Klaus Harter, and Andreas Zell. ModuleMaster: A new tool to decipher transcriptional regulatory networks. *Biosystems*, 99(1):79--81, January 2010. [DOI | link]

[8] Marcel Kronfeld, Andreas Dräger, Moritz Aschoff, and Andreas Zell. On the Benefits of Multimodal Optimization for Metabolic Network Modeling. In Ivo Grosse, Steffen Neumann, Stefan Posch, Falk Schreiber, and Peter Stadler, editors, *German Conference on Bioinformatics (GCB 2009)*, volume P-157 of *Lecture Notes in Informatics*, pages 191--200, Halle (Saale), Germany, September 2009. German Informatics Society. [link]

[9] Andreas Dräger, Marcel Kronfeld, Michael J. Ziller, Jochen Supper, Hannes Planatscher, Jørgen B. Magnus, Marco Oldiges, Oliver Kohlbacher, and Andreas Zell. Modeling

metabolic networks in *C. glutamicum*: a comparison of rate laws in combination with various parameter optimization strategies. *BMC Systems Biology*, 3(5):5, January 2009. [DOI | link | pdf]

[10] Marcel Kronfeld, Christian Weiss, and Andreas Zell. A dynamic swarm for visual location tracking. In *6th International Conference on Ant Colony Optimization and Swarm Intelligence (ANTS 2008)*, pages 203--210, Brussels, Belgium, September 2008.

[11] Marcel Kronfeld. *EvA2 Short Documentation*. Center for Bioinformatics Tuebingen, University of Tuebingen, Sand 1, 72076 Tübingen, Germany, 2008 edition, 2008.

[12] Andreas Dräger, Marcel Kronfeld, Jochen Supper, Hannes Planatscher, Jørgen B. Magnus, Marco Oldiges, and Andreas Zell. Benchmarking Evolutionary Algorithms on Convenience Kinetics Models of the Valine and Leucine Biosynthesis in *C. glutamicum*. In Dipti Srinivasan and Lipo Wang, editors, *IEEE Congress on Evolutionary Computation (CEC 2007)*, pages 896--903, Singapore, September 2007. IEEE Computational Intelligence Society, IEEE Press. [DOI | link]

[13] Marcel Kronfeld, Christian Weiss, and Andreas Zell. Swarm-supported outdoor localization with sparse visual data. In *3rd European Conference on Mobile Robots (ECMR 2007)*, pages 259--264, Freiburg, Germany, 2007.

[14] Jan Bronni, Stefanie Hofmann, Marcel Kronfeld, and Andreas Monger. Eine strategieorientierte, modulare Simulationsumgebung für mobile Ad-Hoc-Szenarien. In *Informatiktage 2005*, Bonn, Germany, April 2005. Gesellschaft für Informatik (GI).

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