Dr.-Ing. Markus Schwehm

Background

- 1982: Abitur at the Public Secondary School in Wörth am Rhein
- 1982-1985: Student of Mathematics and Computer Science at the Technical University of Karlsruhe, Vordiplom
- 1985-1988: Student of Mathematics and Computer Science at the Technical University of Munich, Diplom
- 1986-1988: Working Student at the HYPO-Bank in Munich
- 1988-1990: Civil Servant at the Research Center for Environment and Health (GSF) in Munich, Institute for Medical Computing and Systems Analysis (Prof. Pöppl)
- 1990-1996: Research Assistant at the University of Erlangen-Nuremberg, Institute for Mathematical Machines and Data Processing (IMMD), Department for Computer Architecture and Performance Evaluation (Prof. Herzog), Doktor-Ingenieur
- 1997: Postdoc at the Tandem Research Laboratory, Cupertino, CA, USA
- 1997-1999: Research Assistant at the University of Stuttgart, Institute for Parallel and Distributed High Performance Computing (IPVR), Department for Distributed Systems (Prof. Rothermel)
- since 1999: Research Assistant at the University of Tübingen, Wilhelm-Schickard-Institute for Computer Science (WSI), Department for Computer Architecture (Prof. Zell)

Research Interests

- Evolutionary Algorithms and their parallelization
- Modelling and Simulation of cellbiological Processes
- Bioinformatics, in particular Rational Drug Design

Current Projects

- SOL: Search and Optimization of Lead Structures (BMBF-Project)
- Simulation of Complex Biological Systems (Strukturförderung)

- Simulation der Ausbreitung von Infektionen (SimPox)

Publications

- **M. Schwehm (2001):** '*Parallel Stochastic Simulation of Whole-Cell Models*', (Paper accepted for publication in ICSB 2001 proceedings)
- **M. Schwehm, N. Gehlenborg, H. Post, A. Stein and K. Weber (2001):** '*Parallel Simulation Engines for Whole-Cell Models*', (Poster accepted for publication at ICSB 2001)
- **M. Schwehm, S. Heeß, E. Rheinbay, M. Schröder (2001):** '*Metabolizer: A Java Simulation Environment for Whole-Cell Models*', (Poster accepted for publication at ICSB 2001)
- **M. Schwehm (2001):** '*Fast Stochastic Simulation of Metabolic Networks*', In: E. Wingender, R. Hofestädt & I. Liebich (Eds.): 'Proc. German Conf. Bioinformatics (GCB 2001), pp. 223-226, Poster abstract.
- **M. Straßer, J. Baumann and M. Schwehm (1999):**'*An Agent-Based Framework for the Transparent Distribution of Computations*', In: H. R. Arabnia (Ed.): `Int. Conf. Parallel and Distributed Processing Techniques and Applications (PDPTA'99)', CSREA 1999 Volume I, pp. 376-382.
- **F. Hohl, U. Kubach, A. Leonhardi, K. Rothermel and M. Schwehm (1999):**'*Nexus - An Open Global Infrastructure for Spatial-Aware Applications*', In: T. Imielinski and M. Steenstrup (Eds.): Proc. Fifth Annual ACM/IEEE Int. Conf. Mobile Computing and Networking (MOBICOM´99), ACM Press, pp.
- **U. Kubach, A. Leonhardi, K. Rothermel and M Schwehm (1999):** '*Analysis of Distribution Schemes for the Management of Location Information*' , Bericht 1999/01, Fakultät Informatik, Universität Stuttgart. (submitted for publication).
- **K. Rothermel and M. Schwehm (1999):** '*Mobile Agents*', In: A. Kent and J. G. Williams (Eds.): Encyclopedia for Computer Science and Technology, Volume 40 - Supplement 25,

New York: M. Dekker Inc., pp. 155-176.

- **M. Schwehm (1998):** '*Mobile Softwareagenten*', OBJEKTspectrum 6/1998, pp. 19-23.
- **J. Baumann, F. Hohl, K. Rothermel, M. Schwehm and M. Straßer (1998):**'*Mole 3.0: A Middleware for Java-based Mobile Software Agents*', In: N. Davies, K. Raymond and J. Seitz, (Eds.): 'Proceedings Middleware 98', Springer Verlag London, pp. 355 - 370.
- **K. Dussa-Zieger and M. Schwehm (1998):** `*Scheduling of Parallel Programs on Configurable Multiprocessors by Genetic Algorithms*', Journal of Approximate Reasoning, Special Issue on `Approximative Methods in Scheduling', Vol 19 (1-2) 23-38.
- **M. Straßer and M. Schwehm (1997):** `*A Performance Model for Mobile Agent Systems*', In: H. R. Arabnia (Ed.): `Int. Conf Parallel and Distributed Processing Techniques and Applications (PDPTA'97)', CSREA 1997 Volume II, pp. 1132-1140
- **K. Dussa-Zieger and M. Schwehm (1997):** `*Configuration, Mapping and Sequencing by Genetic Algorithms*', In: W. Slany (Ed.): `First Int. Workshop on Approximate Reasoning in Scheduling (ARS'97)'
- **M. Schwehm (1996):** `*Globale Optimierung durch massiv parallele genetische Algorithmen*', Dissertation, Universität Erlangen-Nürnberg, Arbeitsberichte des IMMD Band 30 Nummer 1 (1997)
- **M. Schwehm and A. Ost (1995):** `*Inference of Stochastic Regular Garammars by Massively Parallel Genetic Algorithms*', In: L. J. Eshelman (Ed.): `Genetic Algorithms: Proceedings of the sixth Int. Conf. (ICGA95)', Morgan Kaufmann Publishers 1995, pp. 520-527
- **M. Ettl and M. Schwehm (1995):** `*Determining the Optimal Network Partition and Kanban Allocation in JIT Production Lines*', In: J. Biethahn and V. Nissen, `Evolutionary Algorithms in Management Applications', Springer Verlag, pp.139-152
- **M. Schwehm (1995):** '*Optimierung der Partitionierung und Kanban-Zuordnung bei JIT-Fertigungsstraßen*', In: J. Kuhl and V. Nissen, 'Evolutionäre Algorithmen in Management-Anwendungen', pp. 11-20
- **M. Schwehm, T. Opaterny and K. Kirsch (1994):** `*Plazierung von Makrozellen durch genetische Algorithmen auf verteilten und massiv parallelen Rechnern*', PARS-Workshop in Potsdam, PARS-Mitteilungen Nr. 13, November 1994, pp. 69-74
- **M. Ettl and M. Schwehm (1994):** `*A Design Methodology for Kanban-Controlled Production Lines Using Queuing Networks and Genetic Algorithms*', In: Tenth Int. Conf. System Engineering ICSE`94 in Coventry, UK, Coventry University Press, pp. 307-314
- **M. Schwehm and T. Walter (1994):** `*Mapping and Scheduling by Genetic Algorithms*', In: Buchberger, B. and Volkert, J. (Eds.): `Parallel Processing: CONPAR 94 - VAPP VI' Third Joint Int. Conf. Vector and Parallel Processing in Linz, Austria, September 1994, Springer Verlag 1994, LNCS 854, pp. 832-841,
- **M. Schwehm (1994):** `*Massively Parallel Genetic Algorithms*', In: Dekker, L. (Ed.): `Massively Parallel Processing - Applications and Development', Proc. Int. Conf. MPP `94 in Delft, The Netherlands, Elsevier Science Publ., pp.505-512
- **M. Schwehm, K.D. Reinartz, T. Walter, S.S. Gold, C. Schäftner, T. Opaterny, A. Ost und N. Engst (1993):** `*Massiv Parallele Genetische Algorithmen - Beiträge zum Tag der Informatik Erlangen `93*', Interner Bericht IMMD VII - 8/93, Universität Erlangen-Nürnberg 1993,
- **M. Schwehm (1993):** `*A Massively Parallel Genetic Algorithm on the MasPar MP-1*', In: Albrecht R.F. et al (Eds.): `Artificial Neural Nets and Genetic Algorithms' Proc. Int. Conf. ANNGA `93 in Innsbruck, Austria, Springer-Verlag Wien 1993, pp.502-507
- **M. Schwehm (1993):** `*Massiv Parallele Genetische Algorithmen*', PARS-Workshop in Dresden `Feinkörnige und massive Parallelität', PARS-Mitteilungen Nr. 12, Juli 1993, pp.181-191
- **M. Schwehm (1992):** `*Implementation of Genetic Algorithms on Various Interconnection Networks*', In: Valero M. et al (Eds.): `Parallel Computing and Transputer Applications I' Proc. Int. Conf. PACTA `92 in Barcelona, Spain IOS Press/CIMNE, Barcelona 1992, pp.195-203
- **M. Schäfer, M. Gutzmann and M. Schwehm (1992):** `*Comparing the DAP, Meiko and Suprenum with a Fluid Dynamic Benchmark*', In: Bouge, L. et al (Eds.): `Parallel Processing: CONPAR 92 - VAPP V', Proc. Int. Conf. CONPAR/VAPP in Lyon, France, 1992 Springer-Verlag 1992, LNCS 634, pp.229-240
- **M. Schwehm (1992):** `*Erste Erfahrungen mit dem Data Transport Computer (DTC) und MultiC*', PARS-Workshop Dagstuhl `Parallelrechner und Programmiersprachen', PARS-Mitteilungen Nr. 10, Juli 1992, pp.5-11,
- **M. Schwehm and A. Strey (1991):** `*A Comparision of Interconnection Networks for*

Large SIMD Parallel Computers', In: Mirenkov, N. N. (Ed.): `Parallel Computing Technologies' Proc. Int. Conf. PaCT-91 in Novosibirsk, USSR, World Scientific, Singapore 1991, pp.223-234

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