

DFG Priority Program 1183

Organic Computing

program/steering committee:

Christian Müller-Schloer
Hartmut Schmeck (Coordinator)
Theo Ungerer

7th Colloquium

IBM Research Lab

Rüschlikon, September 17/18, 2008

kindly supported by



This colloquium:

- Kindly supported by IBM
 - Special thanks to the local organizers
Pascale Lenz, Ariane Luttenauer, and Matthias Neidhöfer
- Many thanks also to Lei Liu.
- Major topic: **Status of the projects of the priority program**
- Therefore:
 - 19 project presentations (20+10 min.)
- In addition
 - 3 talks on research at IBM

Events within SPP 1183 (since last colloquium)

- Mini Workshop:
LCS: Run-Time/Design-Time-Learning and Hardware/Software-Partitioning and Implementation, Karlsruhe, June 19/20, 2008
- Mini Workshop:
Multi-agent Systems, Jena, June 12/13, 2008
- Mini Workshop:
OC-Terminology, Hannover, July 18, 2008

Events related to Organic Computing (since last colloquium)

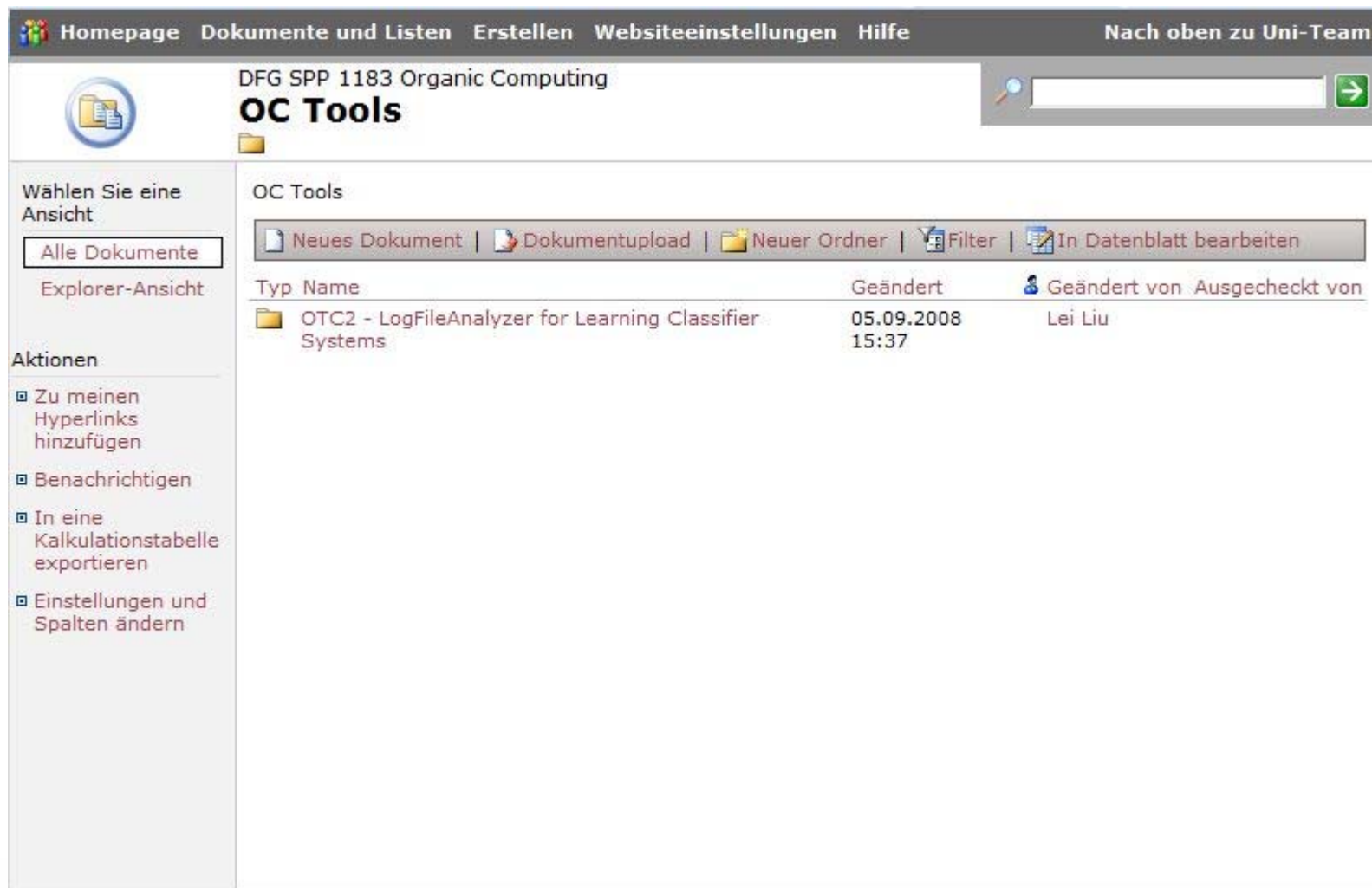
- Dagstuhl Seminar on Organic Computing, March 30 – April 4, 2008
- [CF'08](#): 2008 ACM International Conference on Computing Frontiers, Ischia, Italy, May 5-7, 2008
- [Pervasive 2008](#): Curious Places: Workshop on Self-Aware Systems for Intelligent Environments, Part of the 6th International Conference on Pervasive Computing, Sydney, Australia, May 19-22, 2008
- [ICAC08](#): 5th IEEE International Conference on Autonomic Computing, Chicago, USA, June 2-6, 2008
- [ATC-08](#): 5th International Conference on Autonomic and Trusted Computing, Stavanger, Norway, June 23-25, 2008
- [BICC08](#): 2nd IFIP Conference on Biologically Inspired Collaborative Computing, Milano, Italy, September 7-10, 2008
- [OCWS GI 2008](#): Workshop Adaptive and Organic Systems, auf der 38. Annual Conference Gesellschaft für Informatik, München, Deutschland, September 12, 2008

Events related to Organic Computing (next conferences)

- [SASO 2008](#): 2nd IEEE International Conference on Self-Adaptive and Self-Organizing Systems, Isola di San Servolo (Venice), Italy, October 20-24, 2008
- [ARCS 2009](#): 22nd International Conference on Architecture of Computing Systems, TU Delft, the Netherlands, March 10 - March 13, 2009
→ **Submission deadline October 10, 2008**
- [SSCI 2009](#): IEEE Workshop on Organic Computing at SSCI 2009, Nashville, Tennessee, USA, March 30 - April 2, 2009
→ **Submission deadline October 31, 2008**
- [CEC 2009](#): 2009 IEEE Congress on Evolutionary Computation, Trondheim, Norway, May 18-21, 2009
→ **Submission deadline November 1, 2008**

New feature on OC Website: Tools

Internal site (sharepoint):



The screenshot shows the OC Tools SharePoint interface. At the top, there is a navigation bar with links: Homepage, Dokumente und Listen, Erstellen, Websiteeinstellungen, and Hilfe. On the right of this bar is a link to 'Nach oben zu Uni-Team'. Below the navigation bar, the page title is 'DFG SPP 1183 Organic Computing' followed by 'OC Tools'. A search bar is located on the right side of the page header. On the left side, there is a sidebar with the following sections: 'Wählen Sie eine Ansicht' (with a button for 'Alle Dokumente' and a link for 'Explorer-Ansicht'), and 'Aktionen' (with links: 'Zu meinen Hyperlinks hinzufügen', 'Benachrichtigen', 'In eine Kalkulationstabelle exportieren', and 'Einstellungen und Spalten ändern'). The main content area is titled 'OC Tools' and contains a toolbar with icons for 'Neues Dokument', 'Dokumentupload', 'Neuer Ordner', 'Filter', and 'In Datenblatt bearbeiten'. Below the toolbar is a table with the following data:

Typ	Name	Geändert	Geändert von	Ausgecheckt von
Ordner	OTC2 - LogFileAnalyzer for Learning Classifier Systems	05.09.2008 15:37	Lei Liu	

New feature on OC Website: Tools



Public site:

DFG SPP 1183 ORGANIC COMPUTING

HOME CONTACT

OC logo

- NEWS
- OVERVIEW
- CALL FOR PROPOSALS
- PROGRAM PROPOSAL
- PROJECTS
- EVENTS
- SCIENTIFIC BOARD

TOOLS

Software

- LogFileAnalyzer for Learning Classifier Systems

Contributions to this site should be sent to Lei Liu
Lei.Liu@kit.edu
(see his recent message)

Learning Classifier System (LCS) experiments. LCSs are a population of rules (called classifiers). In an LCS New classifiers are created, bad classifiers are deleted, es by visualizing classifier sets in tables and diagrams: on, the match set, and the action set can be displayed in property as criterion. Therefore, classifiers of special rmined for further investigation. The development of tly addressing the sets of an iteration by its number. ized using histograms. Histograms are created automatically for each classifier property and visualize the distribution of classifiers with respect to the displayed property. Filters can be applied to each histogram chart, additionally charts can be saved and printed.

- Single classifiers can be compared to all other classifiers in a set. Diagrams display the classifier's properties relative to the minimum and maximum values of the containing set.

Further information & Downloads:
OTC2 - Organic Traffic Control Collaborative project web site

Go back to Software List

Call for Proposals

Final Phase of SPP Organic Computing (2009 – 2011)

- Call has been sent out to all interested persons (available on OC website).
- **Submission deadline: November 21, 2008**

Major topics:

- **Controlled self-organisation in technical systems**
- **Technologies for Organic Computing**

Important objective

- "... it will be indispensable to evaluate the anticipated methods and technologies of OC with respect to relevant technical application areas.
- In particular, at the end of this priority program, the major achievements of the research projects with respect to the engineering of organic computer systems should be clearly visible."

Therefore

- Our DFG programme officer has applied for an additional budget to finance test environments or demonstrators → additional proposals possible, but should not lead to a reduction of our research budget.

This colloquium:

Organisational remarks:

- **Settlement of travel expenses:**
 - Fill in travel expense forms
 - Attach all relevant tickets and bills (originals, no copies)
 - Send to Institut AIFB – Geb. 05.20, Sekretariat LS1,
Universität Karlsruhe
(use preaddressed envelope)
- **To make your presentation available, copy it onto the memory stick of Lei Liu, please.**
- Suggestion for **Dinner:**
- **Tomorrow, after the colloquium, there will be a shuttle service to the train station and/or to the hotel.**
Please, indicate on the list which of these services you need
(hotel or train station)!

Detailed Program:

Wednesday, September 17:

13:00 h Opening and Welcome (Matthias Neidhöfer, Hartmut Schmeck)

13:15 h Global Technology Outlook (Dorothea Wiesmann, IBM)

14:30 h *Session I*

- **Energy aware self organized communication in complex networks** (Dirk Timmermann)

15:00 h Coffee Break

15:30 h *Session II*

- **The bio-chemical information processing metaphor as a programming paradigm for organic computing II** (Peter Dittrich)
- **OC μ - Organic computing middleware for ubiquitous environments** (Wolfgang Trumler, Theo Ungerer)
- **Model-driven development of self-organizing control applications** (Hans-Ulrich Hei, Gero Mhl, Torben Weis)

17:00 h Coffee Break

17:30 h *Session III*

- **Architecture and design methodology for autonomic system on chip (ASoC)** (Andreas Herkersdorf, Wolfgang Rosenstiel)
- **Digital on-demand computing organism for real-time systems** (Jrgen Becker, Uwe Brinkschulte, Jrg Henkel, Wolfgang Karl)

Detailed Program

Thursday September 18

08:30 h Research Compute Cloud (Andreas Meier, IBM)

09:00 h *Session IV*

- **AUTONOMOS: A distributed and self-regulating approach for organizing a large system of mobile objects** (Sandor Fekete, Stefan Fischer)
- **Formal modeling, safety analysis, and verification of organic computing applications - SAVE ORCA** (Wolfgang Reif)
- **Organic fault-tolerant control architecture for robotic applications** (Werner Brockmann, Erik Maehle)

10:30 h Coffee Break

11:00 h *Session V*

- **Smart teams: local distributed strategies for self-organizing robotic exploration teams** (Friedhelm Meyer auf der Heide, Christian Schindelhauer)
- **On-line fusion of functional knowledge within distributed sensor networks** (Bernhard Sick)
- **Organisation and control of self-organising systems in technical compounds** (Martin Middendorf)
- **Multi-objective intrinsic evolution of embedded systems - MOVES** (Marco Platzner)

13:00 h Lunch Break

Detailed Program

Thursday September 18

14:00 h *Session VI*

- **Generic emergent computing in chip architectures** (Dietmar Fey)
- **OCCS – observation and control of collaborative systems** (Jürgen Branke, Jörg Hähner, Christian Müller-Schloer, Hartmut Schmeck)
- **OTC2 – organic traffic control collaborative** (Jürgen Branke, Jörg Hähner, Christian Müller-Schloer, Hartmut Schmeck)

15:30 h Coffee Break

16:00 h System Management Technology Outlook (David Chess, IBM)

16:30 h *Session VII*

- **Embedded performance analysis for organic computing** (Rolf Ernst)
- **A modular approach for evolving societies of learning autonomous systems** (Bernd Kleinjohann, Franz J. Rammig)
- **Learning to look at humans** (Rolf P. Würtz)

18:00 h Concluding Remarks

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Final remarks

- Thanks again to all of you for active contributions in talks and discussions.
- Thanks again to IBM for the perfect environment for this colloquium!
- Have a good trip back.