



Informatikbüro
Gerd Stolpmann

Company Profile

Quick Overview

Founded:	2005
Legal form:	non-incorporated (Einzelunternehmen)
Owner:	Gerd Stolpmann
Employees:	0
VAT ID:	DE240159250
	(= company ID in the EU)

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Company Goal

The term *Informatikbüro* can be best translated with "consulting on computer science". The mission is to help applying newer results of computer science to real engineering problems. Of course, the created software must be production-ready – we are not interested in academic solutions. The expectation is that the result is better than software written with conventional methods.

Current Focus

In the last five years the focus has been on functional programming (FP), especially on the language Ocaml. We helped several customers to get started with it, and in one case the customer got continuous consulting. Ocaml is in particular interesting because of its multiparadigm approach (it encompasses all of functional, imperative, object-oriented, and procedural programming), and its excellent runtime performance. Contrary to intuition we found it especially useful for system programming.

In addition to consulting, we also provided services to the Ocaml developer community. In particular, the GODI platform is an initiative of Informatikbüro. Also, we organized the sponsoring for a number of open source libraries.

Generally, there is also a lot of interest for advanced system programming such as virtualization, and distributed filesystems. As with everything, we do not only want to be plain users or integrators, but want to be actively involved. A few years ago the software UMLMON was created as a monitor for the (now outdated) virtualization technology User Mode Linux. Currently, an advanced distributed filesystem is being developed.

Ongoing Activities

- Website camlcity.org
- GODI platform. A commercial variant of GODI is planned.
- The PlasmaFS filesystem
- Maintenance of a number of open source projects

Highlights in Past Projects

In the following a number of projects and part projects are listed for better illustration of skills and scientific methods. Note that some companies wanted high confidentiality, so that they cannot be named here.

Crawler for Wink Technologies, Inc.

A special-purpose web crawler was developed which was able to fetch structured multi-page documents from the web. The crawler was database-driven and wrote the parsed documents to a NoSQL storage with the special ability to recombine documents from fragments. The high-performance crawler was written in Ocaml, almost entirely by Gerd Stolpmann (only the parsers were teamwork).

Cluster Monitoring for Wink Technologies, Inc.

Wink had compute clusters built with a variety of different components running on the various machines. A monitoring solution was needed which continuously observed the activities of the components, and checked the healthiness of the components. The results of the checks were made available to all components via a highly available key/value store. The solution was designed and implemented by Gerd Stolpmann, also in Ocaml.

Performance Analysis for Anonymous

A GUI program for a medical component did not deliver the expected performance. Gerd Stolpmann analyzed the algorithmic problem, and made suggestions for improvement, mostly by switching algorithms (e.g. by exchanging n^2 algorithms with $n \log n$ algorithms). The program was written in Ocaml.

About Gerd Stolpmann



- Owner of Informatikbüro Gerd Stolpmann
- Computer Scientist
- Age: 40

Skills and Qualifications

- Outstanding expert for the practical application of the Ocaml programming language
- Well-experienced in system programming (such as cluster programming with RPC systems, event-driven programming, network programming, development of (simple) databases), and several forms of concurrent programming.
- Experience with custom cluster software (e.g. self-written distributed data stores), including high-availability solutions
- Although not a kernel hacker there is good knowledge of how Linux works, and how user space makes best use of the OS

Education

- Degree "Diplom-Informatiker" from the Technical University Darmstadt, 1997, cum laude. (Note that this degree is commonly accepted as equal to a Master in computer science.) The thesis was about deriving and proving a class of algorithms with tactical theorem provers. I also collected expertise in parsing and graph theory.

Positions

- 2005-now: owner of Informatikbüro
- 1998-2004: Consultant for web applications and system engineering at NPC GmbH, Germany
- 1997-1998: Developer for GIS at Isys GmbH, Germany

Other Skills

- Web development: HTML, Javascript, CSS, DOM, CGI
- Graphical User Interfaces: GTK+, TK
- SQL Databases from a user perspective: PostgreSQL, MySQL, Informix, Sqlite
- XML: Parsing, DOM, SAX, DTDs, XPath
- Hadoop and HDFS
- Languages – fluent: Ocaml, C, Perl – semi-fluent: Java, C++, PHP (have to look up frequently because it's so long ago)