

# Profile Stephan Schuster

Stephan Schuster

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## Summary

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Sociologist and Java Software Developer

- Commercial experience as application programmer and market researcher
- Multi-disciplinary background in social sciences and computer sciences, experience in several research projects in this area
- Specialist knowledge in Web/JEE technologies and Artificial Intelligence
- Specialist knowledge ASAM-ODS Standard, openMDM measurement data management (automotive industry)

## Projects

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### ***Product Life Cycle Database – since 11/2009 (Robert Bosch GmbH)***

During the development of Diesel and Gasoline motor parts over the whole product life cycle, enormous amounts of data are created. These data have so far not been managed in a coherent system. The implementation of a new distributed system with a semantic backend shall replace the existing solutions and harmonise the management, analysis and exchange of measurement related data.

#### ***Responsibilities***

- Redesign of an existing web prototype and migration to a multi-tier, component-based architecture.
- Build- und configuration management with ANT.
- Implementation of application modules (e.g.. search engine with Lucene, authentication).
- Documentation.

#### ***Environment***

- Java 1.6, JEE5, Junit, ANT, JBoss 4.2/5.1, JCA, EJB 3.0, Eclipse, Eclipse RCP, JSF, Apache Lucene, Latex

### ***www.morgengold.de – 05/2009 - 10/2009 (Karlsruhe/Germany)***

Morgengold is a German service for delivering bakery items. Customers typically register with the website and order online. As part of a major redesign and introduction of new concepts, the web application was migrated to a Content-Management based system.

#### ***Responsibilities***

- Implementation of new modules for the management of media (Upload, deletion, approval of pictures, franchising partner profiles etc.).
- Migration of registration and order modules.

#### ***Environment***

- Infogluce CMS, HTML, JSP, Java 1.5, J2EE, EJB 2.1, Oracle 9i

### ***XML Parsers – 02/2009 and 10/2009 (Carl Zeiss Vision GmbH Aalen/Germany)***

Electronic orders at Carl Zeiss Vision arrive at an FTP exchange drive, typically in ASCII format. This data is transformed into an internal XML format for further processing in the integration platform (SAP XI).

#### ***Responsibilities***

- Implementation of XML-parser classes, which transform input documents into the required output format.
- Extension of the test framework for the parsing process.
- Migration of related applications from EJB 2.1 to EJB 3.0

#### ***Environment***

- Java 1.4, SAX, Eclipse, Subversion, EJB 2.1, EJB 3.0, JBoss

### ***Agent-based Computational Economics – 09/2004 - 12/2009(University of Surrey/UK)***

Doctoral thesis in Economics about the applicability of multi-agent simulation and Artificial Intelligence methods to economic modelling. An important part of this work is a software framework for modelling and simulation. Using this system, this research explores the possibilities of modelling agents with cognitive abilities in various domains, e.g. with applications in Game Theory.

#### ***Responsibilities***

- Design and implementation of the core simulation system.
- Built a simple parallel architecture for balancing the computational load of the simulations over a cluster of application servers using JEE methods: Simulations run in a clustered JBoss application server and use the JMS messaging system for control and synchronisation of the computations.
- Application of this tool to analyse games of network formation and discrimination as well as health economic related topics.

#### ***Environment***

- Java 1.4/1.5, JEE5, ANT, Jess, JBoss AS, JBoss Cache, JBoss Messaging, EJB 2.1-3.0, JDBC, JMS, Eclipse

### ***Flashen – 06/2008 – 10/2008 (ARS NOVA GmbH, Esslingen/Germany)***

Flashen is an administration system for Flash software at Daimler AG. ARS NOVA maintains and develops this system. The software is managed by a single application server and data saved in a database backend. Different clients and services connect to the system via different interfaces. For example, Flash developers upload, download and update Flash software with a Java Swing client; manufacturing systems download the Flash software usually in batch jobs managed via JMS.

#### ***Responsibilities***

- Detailed specification and implementation of Change Requests.
- Conducted regression and functional tests.
- Specified test cases and test data.
- Documentation of new functionalities and translation into the English documentation.

#### ***Environment***

- Java 1.4, J2EE, WebSphere Application Server, WebSphere MQ, IRAD, EJB 2.1, CVS

**Premium Business Catalog – 09/2007 – 01/2008 (Heiler Software AG, Stuttgart/Germany)**

The electronic catalogue system Premium Business Catalog (PBC) is a 3-tier architecture based on MS SQL or Oracle as backend and JBoss as application server. Customers typically use the solution as product information and ordering systems in procurement. For the productive deployment of a PBC often customisation and functional enhancements are required on a per-customer basis.

**Responsibilities**

- Customisation of PBC functions for several customer projects.
- Development of custom tools (e.g. for automatic import of product information data into the catalogue).

**Environment**

- Java 1.4, J2EE, JBoss, EJB 2.1, JSP, Eclipse, CVS

**NewTies (<http://www.new-ties.org>) – 09/2004 - 08/2007 (University of Surrey/UK)**

The project's goal is to evolve an artificial society composed of software agents capable of exploring and understanding its environment through cooperation and interaction. The software system built for that purpose consists of 3 major layers – one infrastructure layer (cluster architecture based on RMI), an environment layer simulating a basic natural habitat, and an agent layer providing the intelligence for agents acting in this environment.

**Responsibilities**

- Design and implementation of the artificial environment (plain Java). The environment is the world agents live in, and consists of things like food sources, seasons and other agents, as well as the actions applicable in this world (like eating, moving etc.)
- Maintenance (bug fixing, feature requests) of the artificial environment
- Design and conduct of simulation experiments, for examples prototypes about common problems in simple societies (e.g. the commons dilemma, the evolution of trade etc.)
- Created tools for the simulation experiments based on Swing, e.g. editors for configuration files, visualisation of the simulations

**Environment**

- Java 1.5, Spring, Swing, ANT, JUnit, Subversion

**SimWeb (<http://www.cimne.upc.es/simweb>) – 03/2003 - 09/2004 (University of Surrey/UK)**

This project aimed at providing European businesses in the digital contents sector with insights and tools enabling them to make informed business strategy decisions and become more competitive by adapting their traditional business models, using a multi-agent simulation approach.

**Responsibilities**

- Liaised with the business partners of the project for requirements gathering and evaluation of prototypes, presented and demonstrated the prototypes at workshops and conferences. The software was a desktop application with two major components – one for representing a firm's market, and a simulator for simulating different scenarios in that market.
- Implemented the prototypes in Java 1.4, using Java Swing and JESS (Java Expert System Shell), a production rule system

**Environment**

- Java 1.4, ANT, Swing, Jess, JBuilder, RePast Simulation Toolkit

### ***Customer administration system for Eplus – 04/2002 – 09/2002 (ABF GmbH/Softlab GmbH, Munich and Cologne/Germany)***

This was a large project for the migration and extension of existing legacy systems of a German mobile phone company to a 3-tier architecture. The aim was to base the different Eplus systems on a common technological basis and to concentrate the business logic into the EJB layer. During the phase when I was a member of the team, the focus was on the migration of an existing 2-tier system (Rich Visual Basic Client - Oracle database on the 3-tier architecture (Thin Visual Basic Client – EJB/Bea Weblogic 5.1 – Oracle).

#### ***Responsibilities***

- Implementation of business layer functionality according to specifications. The design used a session façade. I implemented stateless as well as entity beans in the façade. Persistence was handled directly via JDBC.
- Bugfixing of the business layer as well as the front tier (Visual Basic client)
- Responsible for the implementation (according to a design document) of a workflow functionality for handling contract alterations and notices.

#### ***Environment***

- Java 1.4, J2EE, ANT, EJB, Bea Weblogic 5.1, JDBC, Oracle, CVS, JBuilder

### ***XGate SOAP Server – 10/2001 - 03/2002 (ABF GmbH, Munich/Germany)***

This was work conducted with other developers of ABF for a product proof of concept. The aim was to develop a common, fully transparent interface between web clients (e.g. Flash, Java Applets) and proprietary server-side systems for various purposes. Clients direct requests to the server; the server locates and delegates the request to the required service. A naming system implementing JNDI was developed to locate the service. This allowed the plug-in of additional services by simply adding its accessor to the JNDI tree. Proprietary services could be, for example, a messaging/chat system using JMS, or a file system.

#### ***Responsibilities***

- Implementation of the web service
- Implementation of the service locator according to the JNDI specification
- Implementation of some example plug-ins, e.g. delivery of JMS messages to polling clients, or a chat functionality with other web clients
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#### ***Environment***

- Java 1.4, J2EE, Apache SOAP, JNDI, Weblogic 6.1, CVS, JBuilder

### ***VPN Administrations Tool – 06/2001 - 08/2001 (ABF GmbH, Munich/Germany)***

In this project, a web application (JSP client, business logic located in EJBs) for a telecommunications company to administer key account customers. The functionality included, e.g., the addition of new end users of these customers and the allocation of phone numbers to them.

#### ***Responsibilities***

- This was a support role for the developers responsible for the design and implementation of the application
- Programmed a dummy database and access methods simulating the production environment for the application

#### ***Environment***

- Java 1.4, J2EE, Weblogic 5.1, MS Access, EJB, JDBC

## **Technical skills**

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<b>Database Systems</b>	Good knowledge of MySQL und PostgreSQL Good knowledge in SQL Basic knowledge MS SQL Server Basic knowledge Oracle Basic knowledge DB2
<b>Programming languages</b>	Expert knowledge in Java 1.4 – 1.6 Good knowledge JEE Middleware: EJB 2.1 – 3.0, JMS Good knowledge Web-APIs: JSP, Servlets, JSF Basic knowledge Webservices (Apache SOAP and AXIS)
<b>Operating Systems</b>	Basic knowledge Windows Basic knowledge Unix/Linux
<b>Application Server</b>	Good knowledge of JBoss 4.x, 5.1.0
<b>Specialist areas</b>	Rule-based programming (JESS Java expert systems shell) Artificial Intelligence, in particular experience with search and learning techniques, e.g. Genetic Algorithms, Reinforcement Learning

## **Employment History**

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<b>Since January 2012</b>	Software Developer and Director at EMS Enterprise Measurement Solutions
<b>August 2007 – December 2011</b>	Self-employed software developer
<b>April 2003 – August 2007</b>	Research Fellow at the University of Surrey: European Union sponsored projects in Computational Sociology, Complexity Science, Multi-agent based simulation
<b>March 2001 – March 2003</b>	Java Software Developer at ABF Software Gesellschaft, Munich: Software development and programming with J2EE methods. Worked in-house in supporting roles, as well as on-site for external customers
<b>March 2000 - February 2001</b>	Market Researcher at Socialdata GmbH (Transport- and Mobility research), Munich: Research design and methodological aspects, data preparation and –analysis, programming database applications (MS Access/VBA)

## **Education**

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<b>2004 – 2012</b>	PhD in Economics, University of Surrey/UK.
<b>2000 – 2004</b>	Distance courses (no formal degree) in Computer Science (FU Hagen)
<b>1998/1999</b>	Arabic language course in Damascus/Syria
<b>1993-1998</b>	Studied Sociology, Economics and Islamic Studies in Leipzig, Berlin and Cairo.
<b>1992</b>	German Abitur in Bonn

## ***Languages***

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**German** Native speaker

**English** Fluent

**Arabic** Basic