Curriculum Vitae
Alexander Feldman

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Date of Birth: September 17, 1977

Address: Delft University of Technology
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Research Interests

Automated reasoning, qualitative reasoning, model-based diagnosis, model-based automated fault isolation and recovery, model-based prognosis, testing and test generation, stochastic local search, satisfiability, constraint optimization techniques, abduction and non-monotonic reasoning, reverse engineering.

Education

9/2005 – current *Ph.D., Computer Science*, in progress (expected 2009/2010)
Delft University of Technology, The Netherlands
Thesis: *Algorithms for Model-Based Reasoning*
Advisor: Prof. Arjan van Gemund

9/2002 – 9/2004 *M.Sc. (cum laude), Computer Science (Technical Informatics)*
Delft University of Technology, The Netherlands
Thesis: *Hierarchical Approach to Fault Diagnosis*
Advisor: Prof. Arjan van Gemund

9/1997 – 6/2000 *B.Sc., Computer Science*
UE Varna, Bulgaria

Employment

5/2008 – 9/2008 Intern
Intelligent Systems Laboratory, Embedded Reasoning Area
Palo Alto Research Center (PARC), Inc.
California, USA

9/2005 – 3/2010 Doctoral Research Fellow
Embedded Software Laboratory, Department of Software Technology
Faculty of Electrical Engineering, Mathematics and Computer Science
Delft University of Technology, The Netherlands

4/2005 – 9/2005 Software Architect
Science and Technology BV, Delft, The Netherlands

9/2001 – 4/2005 Senior Programmer
Market Risk Management, ING Bank, Amsterdam, The Netherlands

7/2000 – 9/2001 Senior Programmer
Zend Technologies Ltd., Ramat Gan, Israel

Project Involvement

GRE — The General Redesign Engine (GRE) uses model-based reasoning techniques and Boolean functional synthesis from component libraries to automate redesign for combinational circuits.

LYDIA — LYDIA stands for Language for sYstem DIAgnosis and it is a modeling language and a reasoning tool-kit biased (e.g., there is support for health modeling) towards model-based fault diagnosis. One of the objectives of LYDIA is to to implement novel algorithms which will push the frontiers of model-based diagnosis allowing efficient reasoning over larger systems. Responsible for the framework and modeling language design and implementation and the development of fast algorithms for model-based diagnosis.

FINESSE — The project FINESSE (Fault dIagNosis for Embedded SyStems dEpendability) aims at the improvement of the accuracy of fault diagnosis when applied to electromechanical systems such as the Paper Handling Systems of Océ Copiers. The challenges in fault diagnosis are to infer maximum diagnostic information on the operational status of software and hardware components from a typically limited amount of (noisy) observations. Responsible for the modeling of the system and the design of algorithms for active testing, recovery and prognosis.

DIF — The Diagnosis Interchange Format (DIF) is an XML-based interchange format for Model-Based Diagnosis (MBD). Its main purposes are to allow sharing of diagnostic models, observation data and fault hypotheses, and to facilitate empirical comparative study of the performance of existing and future MBD implementations. Responsible for the DIF schema design and the construction of MBD benchmark suite.

Lego — Lego is a framework for computing derived data from time-series containing prices of financial instruments. Responsible for the design of the framework and the implementation of Lego modules computing correlation matrices, zero coupon rates, historical and implied volatilities and other statistical derivations.

scl+sssl — The Small Crypto Library and Small Secure Socket Library is a public open-source package for providing secure communication. The libraries include own implementation of many modern symmetric and asymmetric cryptographic algorithms.

Zend Appl. Server — A server for hosting long-living web applications written in PHP on top of the ACE (Adaptive Communication Environment) framework. Responsible for the implementation of the timer API.

Puzzle Generator — A package for generation of crosswords. This is an own design and implementation of a guided backtracking algorithm.

Technical Skills

Proficient

Linux, Solaris, IRIX, HP-UX, Windows
C/C++, Java, Perl, PHP, Flex/Bison, LaTeX
MPI, PVM
Markup languages, SOAP
Sybase, Oracle

Familiar

Python, Tcl/Tk, Prolog, Lisp, Pascal, Fortran
Maple, Matlab

Citizenship

Bulgarian, Israeli, permanently living in The Netherlands

Languages English, Bulgarian, Russian (intermediate), Hebrew (basic), Dutch (intermediate)

Memberships AAAI (student), ACM (student), IEEE (student)

References

Referee 1: Prof. Arjan van Gemund
Address: Delft University of Technology
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Referee 2: Dr. Johan de Kleer
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Referee 3: Prof. Gregory Provan
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