Tudor Gîrba

Romanian
Married
Born on August 8, 1977

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Education

2002 – 2005	PhD in Computer Science at the University of Berne, Switzerland
	Title: Modeling History to Understand Software Evolution
	Thesis received summa cum laude.
	Selected finalist for the Cor Baayen Award 2006.
1996 – 2001	Dipl. Eng. in Computer Science at the Politehnica University of Timisoara, Romania

Work Experience

2005 – present	Consultant in software assessment at Sw-eng. Software Engineering Gmbh, Switzerland
	http://sw-eng.ch
2005 – 2009	Senior Researcher at the University of Berne, Switzerland
	http://scg.unibe.ch
2002 – 2005	Junior Researcher at the University of Berne, Switzerland
	http://scg.unibe.ch
2002	Co-founder of the LOOSE Research Group, Timisoara, Romania
	http://loose.upt.ro
2001 – 2002	Software Engineer at S.C. Sava Technologies SRL, Timisoara, Romania
1997 – 2000	Game Programmer/Designer at the Piron Group, Timisoara, Romania

Languages

Romanian	mother tongue
English	fluent
French	medium
Italian	medium
German	basic

Software Engineering Skills

Programming technologies	Smalltalk (VisualWorks, Pharo), Java, C++
	UML, OCL
	XML, XSLT, HTML, CSS
Software engineering	object-oriented design and analysis
	software and data assessment
	test-driven development
	continuous integration
	release management
	agile development
	model-driven engineering
	information visualization
	user interface design
Operating systems	Linux (Debian, Ubuntu), Mac OS X, Windows XP

Software and Data Assessment Projects

2010	**ISC-EJPD – Integration of continuous and contextual assessment in the development process**
	Results: Creation of automatic reports specific for the context of the projects
	Methods: Queries, visualizations, continuous integration, visual language
2010	**Telecommunication company - Assessment of configuration files**
	Results: Creation of a dedicated tool that offered several visualization and browsers for analyzing several thousands configuration files
	Methods used: Meta-modeling, data transformations, visualization, metrics
2009	**ISC-EJPD – Assessment coaching for a quality assurance team**
	Results: Periodical training; Report of the quality of an existing system built together with the team, and on the next refactoring steps.
	Methods used: Visualization, metrics, queries, static analysis, duplication analysis, visual language
2009	**ISC-EJPD – Assessment of the feasibility of building a new version on top of an existing medium-sized Java (JEE) system**
	Results: Report with a description of the current state and problems of the design, and suggestions for refactorings.
	Methods used: Visualization, metrics, queries, static analysis, duplication analysis
2008	**Bundesamt für Migration – Assessment of a medium-sized Java (JEE) system to enable visa consultations among the Schengen states**
	Results: Report of the quality the code; A set of guidelines for the code review process using visualizations and metrics.
	Methods used: Visualization, metrics, queries, static analysis

2007 – 2009	Eidgenössischen Institut für Geistiges Eigentum (Hasler Foundation – Research at University of Berne) – Design of new analyses specific for JEE systems
	Results: New JEE analyses and tools
	Methods used: Visualization, metrics, queries, static analysis, meta-modeling
2006	Bundesamt für Landwirtschaft – Design and Code Review of a medium-sized Java (JEE) system for monitoring the usage of chemicals in agriculture
	Results: Reverse engineering and documentation of the business logic of the application; Recommendations for reengineering, refactoring and reuse of software components.
	Methods used: Visualization, metrics, queries, static analysis, duplication analysis
2005	Bundesamt für Landwirtschaft – Design and Code Review of a medium-sized Java (JEE) software system for monitoring the production of milk
	Results: Analysis of problem domain and software solution, Quality assessment of Java source code; Recommendations for reengineering, refactoring and reuse of software components.
	Methods used: Visualization, metrics, queries, static analysis, duplication analysis
2005	Siemens AG, Switzerland – Analysis of a large C/C++ system (75MB of source code)
	Results: Report identifying design problems in the system
	Methods used: Visualization, metrics, queries, duplication analysis, dependency analysis, static analysis, history analysis, analysis of teamwork
2005 – 2006	Harman/Becker Automotive Systems GmbH, Germany – Analysis of a large C/C++ embedded system (100MB of source code)
	Results: Report of design problems; recommendations for improvement at the code and process level
	Methods used: Visualization, metrics, queries, static analysis, duplication analysis, history analysis

Selected Research and Engineering Projects

2003 – present	Lead architect and developer of the Moose analysis platform
	Moose is an extensive open-source platform for software and data analysis. It is developed in Smalltalk, it is used for research in several European research groups and has been used in the context of many industrial projects.
	Since 2003, it has attracted research projects that were funded with more than 2'500'000 CHF.
	In 2009, Moose has been nominated for the best Swiss open source project award.
	http://moosetechnology.org
	http://themoosebook.org
2007 – present	Initiator and promoter of humane and agile assessment
	I maintain that assessment must be a prominent activity during the software development process. Agile assessment emphasizes tailoring the analysis tools to the context of the problem and data available.
	http://humane-assessment.com
	http://www.tudorgirba.com/services/assessment

2008 – present	**Co-author of the Glamour browsing engine**
	Glamour is an engine for scripting interactive data browsers written in Smalltalk. It won the 3rd prize at the ESUG 2009 Innovation Technology Awards.
	http://moosetechnology.org/tools/glamour
2006 – present	**Co-author of the Mondrian interactive visualization engine**
	Mondrian is an engine for scripting interactive visualizations written in Smalltalk. It received the 2nd prize at the ESUG 2006 Innovation Technology Awards.
	http://moosetechnology.org/tools/mondrian
2007 – present	**Participant in the design and development of the Pier content management system**
	Pier is an open-source content management system written in Smalltalk. I work on the user experience and the impact on the internal design.
	http://www.piercms.com
2002 – present	**Maintainer of the FAMIX language independent meta-model**
	FAMIX is the central source code meta-model in Moose. Several European research groups use it for software analysis.
2007	**Participant in the design of the Small Project Observatory**
	Small Project Observatory is an online visual platform for observing super-repositories of Smalltalk projects. It received the 1st prize at the ESUG 2007 Innovation Technology Awards.
	http://spo.inf.unisi.ch/
2006 – 2008	**Co-author of Changeboxes**
	Changeboxes are a mechanism to model changes as first class entities at the language level. The system was developed in Smalltalk.
2002 – 2005	**Author of the Hismo meta-model and of the Van tool for evolution analysis**
	Hismo is the result of my PhD work. Hismo models evolution as first class entity and it enables succinct expression of historical analyses. The code was written in Smalltalk.
	http://moosetechnology.org/docs/hismo

Teaching

2008 – 2010	**Invited lecturer on topics related to effective innovation and visual communication**
	University of Berne, University of Zürich, University of Lugano, Politehnica University of Timisoara
2008	**Lecturer on software evolution at the University of Berne**
	The lecture spanned 14 weeks and included courses and lab sessions.
2006 – 2010	**Tutorials and invited lecturer on topics related to general software engineering, object-oriented design, software assessment and Smalltalk**
	Venues: University of Berne, Politehnica University of Timisoara, Hasso-Plattner Institute, University of Annecy, University of Mons, Catholic University of Louvain, International Conference on Software Engineering, Working Conference on Reverse Engineering, CHOOSE Forum, /ch/open, Club Qualimetrie France, European Smalltalk User Group, Scrum Breakfast Switzerland, Swiss IT Intelligence Community Forum, Karlsruher Entwicklertag, Conférence Utilisateurs Cincom Smalltalk

2003 – 2006	Assistant for software engineering courses at the University of Berne
2002 – 2009	24 supervised Master and Bachelor students
	In most cases, the work of the students has led to publications and various Smalltalk systems.

Community Activity

2007 – present	Executive Board Member and Treasurer of the Swiss Group on Object-oriented Systems and Environments (CHOOSE)
	http://choose.s-i.ch/
2007 – present	President of the Moose Association
	http://moosetechnology.org/association
2006 – 2010	Program Committee member of several international conferences and workshops in the area of software evolution and modeling
	Smalltalks: 2010
	International Conference on Model Driven Engineering Languages and Systems (MODELS): 2008, 2009, 2010
	International Conference on Software Maintenance (ICSM): 2008, 2009
	Working Conference on Reverse Engineering (WCRE): 2008, 2009, 2010
	Working Conference on Mining Software Repositories (MSR): 2008, 2009, 2010
	International Conference on Evaluation of Novel Approaches to Software Engineering (ENASE): 2008, 2009, 2010
	International Conference Objects, Models, Components, Patterns (TOOLS Europe): 2008, 2009
	International Conference on Program Comprehension (ICPC): 2008
	International Smalltalk Conference (ISC): 2006, 2007
	International Workshop on Program Analysis through Dynamic Analysis (PCODA): 2006, 2007
	Workshop on Languages Descriptions, Tools and Applications (LDTA): 2009
	International Workshop on Model Co-Evolution and Consistency Management (MCCM): 2008
	International Workshop on Principles of Software Evolution and International ERCIM Workshop on Software Evolution (IWPSE/EVOL): 2009
	International Workshop on Visualizing Software for Understanding and Analysis (VISSOFT): 2009
	International Workshop on Principles of Software Evolution (IWPSE): 2007
	International Workshop on Mining Software Repositories (MSR): 2007
	International Workshop on Smalltalk Technologies (IWST): 2009
	Net.ObjectDays Conference: 2006
2007 – 2010	Reviewer for international journals
	IEEE Transactions on Software Engineering (TSE), Transactions on Programming Languages and Systems (TOPLAS), Journal on Software Maintenance and Evolution (JSME), Journal on Web Engineering (JWE), Science of Computer Programming (SCP)

2006 – 2010	Co-organizer of events in the area of software engineering
	Tool Demos at International Conference on Software Maintenance (ICSM): 2010
	Annual Forum of the Swiss Group on Object-oriented Systems and Environments (CHOOSE Forum): 2006, 2008, 2009, 2010
	Workshop on FAMIX and Moose in Reengineering (FAMOOSr): 2007, 2008, 2009
	Working Session on Query Technologies and Applications for Program Comprehension (QTAPC): 2008
	Research Demos at Working Conference on Reverse Engineering: 2006
	Moose Dojos: 2007, 2008, 2009

Selected Smalltalk-related Publications (5 of 60)

The complete list of publications can be found at: http://www.tudorgirba.com/publications

1. Oscar Nierstrasz and Tudor Gîrba. Lessons in Software Evolution Learned by Listening to Smalltalk. In J. Leeuwen et al. (Ed.), SOFSEM 2010, LNCS 5901 p. 77—95, Springer-Verlag, 2010.

2. Tudor Gîrba. The Moose Book, Self Published, 2010. http://themoosebook.org. Work in progress.

3. Stéphane Ducasse and Tudor Gîrba and Adrian Kuhn and Lukas Renggli. Meta-Environment and Executable Meta-Language using Smalltalk: an Experience Report. In Journal of Software and Systems Modeling (SOSYM) 8(1) p. 5--19, feb 2009.

4. Michael Meyer and Tudor Gîrba and Mircea Lungu. Mondrian: An Agile Visualization Framework. In ACM Symposium on Software Visualization (SoftVis'06), p. 135--144, ACM Press, New York, NY, USA, 2006.

5. Oscar Nierstrasz and Stéphane Ducasse and Tudor Gîrba. The Story of Moose: an Agile Reengineering Environment. In Proceedings of the European Software Engineering Conference (ESEC/FSE 2005), p. 1--10, ACM Press, New York NY, 2005. Invited paper.