

Ghanem Soltana

Research Associate

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Personal Details

Date of Birth December 11, 1986
Citizenship Tunisian
Marital Status Married, one daughter

Education

November 2013 - **PhD Candidate in Software Engineering**, *Software Verification and Validation Laboratory, Interdisciplinary Centre for Security, Reliability and Trust (SnT), University of Luxembourg, Luxembourg.*
October 2018 Thesis title: “A Model-Based Framework for Specification and Automated Verification of Compliance to the Tax Law”. This work has received an AFR excellence grant from Luxembourg’s National Research Fund (FNR). Some of the byproduct (Java-based) tools resulting from this project can be found at <http://people.svv.lu/tools/polisim/> and <http://people.svv.lu/tools/SDG/>.
November 2009 - **Masters in Software Engineering**, *Optimization and Intelligent Informatics Laboratory (SOIE), Higher Institute of Management of Tunis, Tunisia.*
February 2012 Project title: “Auto-calibration for the Validation of Multi-Agent Simulations”
September 2005 - August 2009 **Bachelors Degree (Major: Computer Science, Minor: Management and Finance)**, *Higher Institute of Management of Tunis, Tunisia.*
June 2005 **Baccalaureate Diploma in Mathematics**, *School of Nouvelle Medina 3, Tunisia.*

Professional Experience

November 2018- **Research Associate**, *Software Verification and Validation Laboratory, Interdisciplinary Centre for Security, Reliability and Trust (SnT), University of Luxembourg, Luxembourg.*
Ongoing Job description: I conduct applied research related to modeling software systems, software quality assurance, and testing. The core theme of my work is automated test data generation, constraint solving and automated model transformations. Most used technologies in my current work are: UML modeling, Object constraint solving, Eclipse Modeling Framework, Java development, Git, Maven, etc.
October 2012 - July 2013 **Scientific Staff Member**, *Optimization and Intelligent Informatics Laboratory (SOIE), Higher Institute of Management of Tunis, Tunisia.*
Project: “An Optimization Framework for Model Transformation Testing: Errors Detection and Correction”. Joint research with Missouri University of Science and Technology, USA.
My role in the project has been to develop a novel evolutionary approach for combining test case generation with mutation analysis.
February 2009 - August 2009 **JavaEE Developer / Trainee**, *ORASYSTEM, Tunisia*, Project: Reverse-Engineering and Optimization of Tunisian Government’s Vehicle Fleet Management System. A short demonstration available at <http://people.svv.lu/soltana/Demo1.mp4>.
Reverse Engineering, Legacy Systems, Requirements Management, UML Modeling, Java, Server Side Programming, Struts Framework, Eclipse, Hibernate, MVC

Publications

S. G. and et al., “Model-based simulation of legal policies: Framework, tool support, and validation,” *Software & Systems Modeling (SoSyM)*, vol. 17, no. 3, pp. 851–883, 2018.

S. G., *A Model-Based Framework for Legal Policy Simulation and Compliance Checking*. PhD thesis, University of Luxembourg, 2017.

S. G. et al., “Synthetic data generation for statistical testing,” in *Proceedings of 32nd IEEE/ACM International Conference on Automated Software Engineering (ASE’17)*, pp. 872–882, 2017.

S. G. et al., “Model-based simulation of legal requirements: Experience from tax policy simulation,” in *Proceedings of the 24th IEEE International Requirements Engineering Conference (RE’16)*, pp. 303–312, IEEE, 2016.

S. G. et al., “A model-based framework for probabilistic simulation of legal policies,” in *Proceedings of the 18th ACM/IEEE International Conference on Model-Driven Engineering Languages and Systems (MODELS’15)*, pp. 70–79, IEEE Computer Society, 2015.

S. G., “A model-based framework for legal policy simulation and legal compliance checking,” in *Proceedings of Doctoral Symposium co-located with 18th ACM/IEEE International Conference on Model-Driven Engineering Languages and Systems (DS@MODELS’15)*, 2015.

S. G. et al., “Using UML for modeling procedural legal rules: Approach and a study of luxembourg’s tax law,” in *Proceedings of the 17th ACM/IEEE International Conference on Model-Driven Engineering Languages and Systems (MODELS’14)*, pp. 450–466, Springer, 2014.

Skills

<i>Design</i>	UML, Object Constraint Language (OCL), Z, MERISE/2	<i>Databases</i>	Oracle, SQL Server, Access, MySQL, Postgres
<i>Programming</i>	C, Java, Javascript, VB, Python, etc.	<i>Web</i>	HTML/CSS, PHP, JQuery, JSP, Servlets, Struts
<i>Modeling tools</i>	Rational Software Architect, PowerAMC, Papyrus, PowerDesigner, etc.	<i>Development environments</i>	Eclipse, Jbuilder, Oracle Forms 10g, IReport
<i>Other</i>	L ^A T _E X, Microsoft Office, Dreamwaver, PhotoShop, Flash		

Languages

<i>English</i>	Fluent
<i>French</i>	Fluent
<i>Italian</i>	Basic
<i>Luxembourgish</i>	Currently learning level A2
<i>Arabic</i>	Native

Personal Interests

<i>Hobbies</i>	Bass guitar, card games and chess.
<i>Sports</i>	3 years as a professional goal keeper in Sporting Club Ben Arous (Tunisia) 2001-2003.