Curriculum Vitae – Dr.-Ing. Nabila Abdessaied

Personal Data

Birth	August 21^{th}, 1983 in Enfidha, Tunisia
Citizenship	Tunisian/German
Address	Berg-am-Laim-Strae 79, 81673 Munich, Germany
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Studies

2012-2015: Doctor of Philosophy in Computer Science
Topic: Reversible logic and quantum computing.
University of Bremen, Germany.

2007-2009: Master degree in Computer Science.
Topic: Micro-electronic embedded systems.
National Engineering School of Sousse, Tunisia.

2002-2007: Engineering degree in Computer science.
Topic: Networks and distributed systems.
University of sciences of Tunis, Tunisia.

Professional Experiences

Sept. 2016 - now: Senior software Engineer
Design and Development of softwares for specific applications as well as contrubuting on developing software development methodologies.
Infineon Technologies AG, Munich, Germany..

Main projects:

- Embedded Software development environment (EDEN): providing standard embedded software development methodology that consists of workflows, integrated-tools, best practices, training, support and knowledge exchange.
- Infineon's C coding guidelines: Updating the Infineon coding guidelines with respect to MISRA 2012 and ISO26262.
- Alternator Control IC with LIN interface (ACIC-10): contribution on gathering the specification, development, and unit testing of the product firmware project.
- Automotive Realtime Integrated NeXt Generation Architecture (AURIX2G): Development and unit testing of the software checker for the product firmware. As well as, Automatic generation of the activity diagrams from the firmware C code.
- Infineon's XMC Microcontroller Boards for Arduino (XMC-for-Arduino): Development of the Arduino interface package for the XMC series.

Development environment: Eclipse, IntelliJ.
Requirement engineering: Jama.
Programming languages: C, Python, Groovy.
Dependency and Package Management: Conan.
Build systems: Make, CMake.
Code Analysis: ISO26262 guidelines, Misra C 2012, PC-Lint, Polyspace, SonarQube.
Unit testing: Ceedling, Unity.
Code coverage: Gcov.
Revision control systems: Bitbucket, Gerrit, GIT, SVN.
Change and configuration management: Jira
Continuous integration: Jenkins.

Nov. 2013 - July 2016: Research & Development Engineer
Automated translation and quality-driven requirements engineering using NLP techniques.
Framework: Eclipse (Java, Stanford CoreNLP library, Wordnet, SPARQL, Weka).
German Research Center for Artificial Intelligence (DFKI), Bremen, Germany

Jan. 2012 - Dec. 2015: Research & Development Engineer
Optimization of reversible and quantum circuits.
Framework: Eclipse (C++, RevKit).
Institute of Computer Science at University of Bremen, Germany

Feb. 2011 - Dec. 2011: Assistant Researcher
Collecting instruction information in the simulation of multicore architecture.
Framework: Eclipse (C++, LLVM).
University of sciences of Tunis, Tunisia.

Sept. 2009 - Dec. 2011: Assistant Researcher
Teaching and supervising students.
Modules: *Operating systems, data bases, C, algorithms and data structures.*
Institute of Computer Science of Ariana, Tunisia.

Nov. 2007 - Dec. 2008: Software Engineer
Development of information systems (tax systems, salaries management, etc.)
Framework: *Instant developer* (dbms: Oracle, server: Apache Tomcat)
EREAIT: Italian company, based in Tunis, Tunisia.

Internships

December 2009: Research Visitor
Complexity analysis of reversible circuits.
Framework: Eclipse (C++, PiDD).
Research group of Prof. Shin-ichi Minato (erato project), Hokkaido university, Japan.

Jan. - July. 2009: Research Intern
Design and development of a Java Simulator for Fast Prototyping of System-on-chip.
Framework: Eclipse (Java).
Synchronous team, verimag Research Lab in Grenoble, France.

Feb. - Jun. 2007: Web Development Intern
Study and implementation of a web application for the management system of the service after sale.
Framework: .net (C#.net, asp.net, dbms: sql Server Express).
ASTER Informatique company, based in Tunis, Tunisia.

Aug. - Sept. 2006: Software Engineering Intern
Design and implementation of an information system for the management of an agency for hotel rooms reservation.
Framework: *Oracle Developer 2000* (forms, reports, sql, plsql).
University of sciences in Tunis, Tunisia.

July 2005: Summer Intern
Realization of an application that tests the validity of a network creation project.
Framework: turbo c++.
Tunisia Telecoms, based in Sousse, Tunisia.

Software

Rev-quantum-addon: Optimization algorithms for reversible and quantum circuits.
Add-on in the CirKit framework for circuits and logic synthesis.
C++11, boost, Boolector SMT solver, CUDD.

Skills

- **Programming Languages:** C/C++, Java, script shell, c#.net.
- **Functional verification:** e HVL language, VHDL, GTKWave simulator.
- **DBMS:** Oracle, sql Server.
- **Methodologies of Design:** uml, Merise.
- **Editors:** TeX/LaTeX, Microsoft office, Open office.
- **OS:** Unix, Windows.

Language Skills

- **Arabic:** Native language
- **French:** Very good
- **English:** Very good
- **German:** B2 level

Publications

Books

[Abd15] Nabila Abdessaied. *Design of a Java Simulator for Fast Prototyping of System-on-chip*. LAP LAMBERT Academic Publishing, 2015.

[AD16] Nabila Abdessaied and Rolf Drechsler. *Reversible and Quantum Circuits: Optimization and Complexity Analysis*. Springer, 2016.

Books Contribution

[SAD14] Mathias Soeken, Nabila Abdessaied, and Rolf Drechsler. "Problems and New Solutions in the Boolean Domain". In: ed. by Bernd Steinbach. Cambridge: Cambridge Scholars Publishing, 2014. Chap. A framework for reversible circuit complexity.

Journal Articles

[Abd+14] Nabila Abdessaied et al. "Upper bounds for reversible circuits based on Young subgroups". In: *Information Processing Letters* 114.6 (2014), pp. 282–286.

[Abd+16a] Nabila Abdessaied et al. "Complexity of reversible circuits and their quantum implementations". In: *Theoretical Computer Science* 618 (2016), pp. 85–106.

Conference Papers

[Abd+13a] Nabila Abdessaied et al. "Exact template matching using Boolean satisfiability". In: *International Symposium on Multiple-Valued Logic*. 2013, pp. 328–333.

[Abd+13b] Nabila Abdessaied et al. "Reducing the depth of quantum circuits using additional circuit lines". In: *Reversible Computation*. Springer, 2013, pp. 221–233.

[ASD14] Nabila Abdessaied, Mathias Soeken, and Rolf Drechsler. "Quantum circuit optimization by Hadamard gate reduction". In: *Reversible Computation*. Springer, 2014, pp. 149–162.

[Soe+14a] Mathias Soeken et al. "Automating the Translation of Assertions Using Natural Language Processing Techniques". In: *Forum on Specification and Design Languages*. 2014.

[Soe+14b] Mathias Soeken et al. "Quality Assessment for Requirements based on Natural Language Processing". In: *Forum on Specification and Design Languages*. 2014.

[ASD15] Nabila Abdessaied, Mathias Soeken, and Rolf Drechsler. “Technology mapping for quantum circuits using Boolean functional decomposition”. In: *Reversible Computation*. Springer, 2015, pp. 149–162.

[Abd+15] Nabila Abdessaied et al. “Reversible circuit rewriting with simulated annealing”. In: *International Conference on Very Large Scale Integration*. 2015, pp. 286–291.

[Abd+16b] Nabila Abdessaied et al. “Technology mapping of reversible circuits to Clifford+T quantum circuits”. In: *International Symposium on Multiple-Valued Logic*. 2016.

[SAD16] Mathias Soeken, Nabila Abdessaied, and Giovanni De Micheli. “Enumeration of reversible functions and its application to circuit complexity”. In: *Reversible Computation*. Springer, 2016.