Curriculum Vitae – Dr.-Ing. Nabila Abdessaied

Personal Data

Birth	August 21^{th}, 1983 in Enfidha, Tunisia
Citizenship	Tunisian
Address	Luisental 29E, Apt. 8006
	28359 Bremen, 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: Firmware Development Engineer
Design and Development of firmwares for specific applications and systems from the idea to the implementation and usage.
Framework: C/C++.
Infineon Technologies AG, Munich, Germany

Nov. 2013 - now: 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:** B1 level

Publications

[1] Nabila Abdessaied, Mathias Soeken, Robert Wille, and Rolf Drechsler. Exact template matching using Boolean satisfiability. In *International Symposium on Multiple-Valued Logic*, pages 328–333. IEEE, 2013.

[2] Nabila Abdessaied, Robert Wille, Mathias Soeken, and Rolf Drechsler. Reducing the depth of quantum circuits using additional circuit lines. In *Reversible Computation*, pages 221–233. Springer, 2013.

[3] Nabila Abdessaied, Mathias Soeken, Michael Kirkedal Thomsen, and Rolf Drechsler. Upper bounds for reversible circuits based on Young subgroups. *Information Processing Letters*, 114(6):282 – 286, 2014.

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

[5] Mathias Soeken, Nabila Abdessaied, and Rolf Drechsler. A framework for reversible circuit complexity. In *International Workshop on Boolean Problems*, 2014.

[6] Mathias Soeken, Christopher B. Harris, Nabila Abdessaied, Ian G. Harris, and Rolf Drechsler. Automating the Translation of Assertions Using Natural Language Processing Techniques. In *Forum on Specification and Design Languages*, 2014.

[7] Mathias Soeken, Nabila Abdessaied, Arman Allahyari-Abhari, Andi Buzo, Liana Musat, Georg Pelz, and Rolf Drechsler. Quality Assessment for Requirements based on Natural Language Processing. In *Forum on Specification and Design Languages*, 2014.

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

[9] Nabila Abdessaied, Mathias Soeken, Gerhard W Dueck, and Rolf Drechsler. Reversible circuit rewriting with simulated annealing. In *International Conference on Very Large Scale Integration*, pages 286–291. IEEE, 2015.

[10] Nabila Abdessaied, Matthew Amy, Mathias Soeken, and Rolf Drechsler. Complexity of reversible circuits and their quantum implementations. *Theoretical Computer Science*, 618:85 – 106, 2016.

[11] Nabila Abdessaied, Matthew Amy, Mathias Soeken, and Rolf Drechsler. Technology mapping of reversible circuits to Clifford+T quantum circuits. In *International Symposium on Multiple-Valued Logic*. IEEE, 2016.

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

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