Dr. Nabila Abdessaied

Software Engineer

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Summary

Highly skilled Senior Software Engineer with extensive experience in cloud applications, embedded software, and research in natural language processing, reversible logic and quantum computing. Proficient in multiple programming languages, cloud platforms, and agile methodologies. Proven track record in developing and improving software systems for leading technology companies.

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

Jan. 2022 - now: Senior software Engineer
Design and development of Cloud applications in the telecommunication sector.
Microsoft, London, United Kingdom..

Sept. 2016 - Dec. 2021: Senior software Engineer
Design, implementation, and testing of embedded Software.
Infineon Technologies AG, Munich, Germany..

Nov. 2013 - July 2016: Research & Development Engineer
Automated translation of natural language assertions to hardware languages as well as requirements quality assessment using NLP techniques.
German Research Center for Artificial Intelligence (DFKI), Bremen, Germany

Jan. 2012 - Dec. 2015: Research & Development Engineer
Optimization and complexity analysis of reversible and quantum circuits.
Institute of Computer Science at University of Bremen, Germany

Sept. 2009 - Dec. 2011: Assistant Researcher
Teaching and supervising students at university.
Institute of Computer Science of Ariana, Tunisia.

Nov. 2007 - Dec. 2008: Software Engineer
Implementation of software and web applications focused on tax and salary management.
EREAIT: Italian company, based in Tunis, Tunisia.

Skills

- **Agile project management**: Scrum, Jira, ADO.
- **DevOps & CI/CD**: Docker, Jenkins, GitLab, ADO.
- **Infrastructure as code (IaC)**: Terraform, Azure Resource Manager.
- **Cloud Computing Platform**: Microsoft Azure.
- **Container Orchestration System**: Kubernetes.
- **languages & Frameworks**: C/C++, Python, Groovy, Java, shell, Eclipse, IntelliJ, VSCode.
- **Code Analysis**: ISO26262 guidelines, Misra C 2012, PC-Lint, Polyspace, SonarQube..
- **Unit testing**: Ceedling, Unity, PyTest.
- **Code coverage**: Gcov, Python Coverage.
- **Revision control systems**: ADO, Bitbucket, Gerrit, GIT, SVN.
- **DBMS:** Oracle, SQL Server.
- **Editors:** TeX/LaTeX, Microsoft office, Open office.

Licenses and Certifications

ISO 26262 Functional Safety Automotive Exam
TÜV SÜD, *Oct 2018*

Software Development Processes and Methodologies
University of Minnesota - Coursera, *Mar 2020*

Software Design and Architecture Specialization
University of Alberta - Coursera, *Aug 2020*

Data Structures and Algorithms Specialization
University of California San Diego - Coursera, *November 2020*

AlgoExpert Certificate
AlgoExpert, *Mar 2021*

Tech Career Skills: Moving from Developer to Engineering Manager
LinkedIn Learning, *Jun 2021*

Communicating with Confidence
LinkedIn Learning, *Jun 2021*

C++: Advanced Topics
LinkedIn Learning, *Aug. 2021*

C++ Design Patterns: Creational
LinkedIn Learning, *Nov. 2021*

Language Skills

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

Volunteer Experience

Nov. 2018 - now: Supporting children with disabilities in Tunisia by funding their education and health intuitions
TunisAid e.V.

Oct. 2017 - Feb.2018: Arabic teacher
Zahr Aljasmin

Oct. 2014 - Oct. 2015: Observer in the parliamentary and presidential election
Mourakiboun

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.