

Curriculum Vitae

Contact Information:

Name: Alexander Diedrich
E-Mail: alex@adiedrich.com

Professional Experience:

- 09/2015 – current Fraunhofer Application Center IOSB-INA
Technical Employee
- Optimization
 - Natural language processing
 - Fault diagnosis and predictive maintenance
 - Anomaly Detection
- 03/2013 – 08/2015 Fraunhofer Application Center IOSB-INA
Integrated degree program
- Natural language processing
 - Fault diagnosis and predictive maintenance
 - Design of embedded systems with hardware description languages
- 09/2012 – 02/2013 Phoenix Contact Electronics GmbH
Student employee
- Creating and adapting software test-cases to find faults in embedded systems
 - Porting software test applications to new platforms
- 01/2012 – 08/2012 Phoenix Contact Electronics GmbH
Technical specialist for quality assurance
- Developing automated test frameworks
 - Running manual software tests
 - Creating and adapting software test-cases to find faults in embedded systems
- 09/2008 – 01/2012 Phoenix Contact Electronics GmbH
Apprenticeship for system informatics technician
- Designing and developing hardware
 - Diagnosing faults in embedded systems
 - Writing and maintaining software

Education:

- 09/2016 – current Bielefeld University (Master of Arts), Computational Linguistics
- 09/2015 – current Ostwestfalen-Lippe University of Applied Sciences (Master of Science), Information Technology
- 09/2012 – 08/2015 Ostwestfalen-Lippe University of Applied Sciences (Bachelor of Science), Computer Engineering

09/2009 – 06/2011 Felix-Fechenbach-Berufskolleg (Advanced technical college certificate)

09/2002 – 06/2008 Realschule Steinheim (GCSE)

International Experience:

08/14/2011 – 08/27/2011 Phoenix Contact Ltd.
Halesfield 13, Telford

18/04/2016 – 04/10/2016 PARC, a Xerox Company
3333 Coyote Hill Road
94304 Palo Alto, CA
Visiting Researcher – working on site

01/12/2016 – 31/12/2017 PARC, a Xerox Company
3333 Coyote Hill Road
94304 Palo Alto, CA
Visiting Researcher

Personal Achievements:

09/16 Received Best Paper Award at 21st IEEE International Conference on Emerging Technologies and Factory Automation (ETFA)

12/2015 Honored for best graduation in 2015

10/2014 Awarded the German Scholarship for talented students

11/2012 Honored for the best apprenticeship in the state of NRW

Special Skills:

7/2014 ISTQB Certified Tester – Foundation Level

04/2014 Cambridge English Level 3 Certificate in ESOL International Advanced (CAE)

Committee Work:

09/2015 – 08/2017 Student Member at the Examination Board for Master Information Technology

10/2015 Session Chair at Machine Learning for Cyber Physical Systems Conference (ML4CPS) in Lemgo, Germany

09/2014 – 08/2015 Student Member at the Examination Board for Bachelor Computer Engineering

Publications:

Diedrich, Alexander; Bunte, Andreas; Maier, Alexander, Niggemann, Oliver: Kognitive Architektur zum Konzeptlernen in technischen Systemen. In: Machine Learning for Cyber Physical Systems (ML4CPS 2015), Lemgo, Oct. 2015

Diedrich, Alexander; Böttcher, Björn; Niggemann, Oliver: Exposing Design Mistakes during Requirements Engineering by Solving Constraint Satisfaction Problems to Obtain Minimum Correction

Subsets. In: 8th International Conference on Agents and Artificial Intelligence (ICAART 2016), Rome, Feb. 2016

Bunte, Andreas, Alexander Diedrich, and Oliver Niggemann. "Natürlichsprachliche Schnittstelle für Produktionssysteme." In: Tagungsband des Entwicklerforums "HMI – Komponenten Lösungen", June 2016

Bunte, Andreas, Alexander Diedrich, and Oliver Niggemann. "Integrating semantics for diagnosis of manufacturing systems." *Emerging Technologies and Factory Automation (ETFA), 2016 IEEE 21st International Conference on.* IEEE, 2016.

Bunte, Andreas, Alexander Diedrich, and Oliver Niggemann. "Semantics Enable Standardized User Interfaces for Diagnosis in Modular Production Systems." In: Proceedings of the Workshop on the Principles of Diagnosis, October 2016, Denver, CO

Diedrich, A., Feldman, A., Perdomo-Ortiz, A., Abreu, R., Niggemann, O., & de Kleer, J. Applying Simulated Annealing to Problems in Model-based Diagnosis. In: Proceedings of the Workshop on the Principles of Diagnosis, October 2016, Denver, CO

Diedrich, Alexander, Jens Eickmeyer, Peng Li, Tobias Hoppe, Martin Fuchs, and Oliver Niggemann. „Universal Process Optimization Assistant for Medium-sized Manufacturing Enterprises as Self-learning Expert System“. In: Proceedings of Automation Conference 2017, Baden-Baden, Germany

Perdomo-Ortiz, A., Feldman, A., Zhu, Z., Ozaeta, A., Isakov, S., Denchev, V., ... & De Kleer, J. (2017). Model-based diagnosis in combinational digital circuits: An application with potential for quantum speedup. *Bulletin of the American Physical Society*, 62.

Perdomo-Ortiz, A., Feldman, A., Ozaeta, A., Isakov, S. V., Zhu, Z., O'Gorman, B., ... & Lackey, B. (2017). On the readiness of quantum optimization machines for industrial applications. *arXiv preprint arXiv:1708.09780*.