

Curriculum Vitae

Identification

Dr. rer. nat. Lars Grunske
Lecturer, Swinburne University of Technology
Faculty of Information and Communication Technologies

Employment History

Swinburne University of Technology, Melbourne	Lecturer, 1/2008-ongoing
University of Queensland, Brisbane	Boeing Postdoctoral Research Fellow, 10/2004-9/2007
CWI, Amsterdam	Postdoctoral Research Fellow, 3/2004-6/2004
Hasso-Plattner Institute, Potsdam	Research Assistant, PhD Student, 10/2000-2/2004
Hahn-Meitner-Institute, Berlin	Software Engineer (part time, 20h/week), 9/1996-9/2000

Education

Dr. rer. nat. (PhD)	Hasso-Plattner-Institute, University of Potsdam, Ph.D. Advisor: Prof. Dr. habil. Peter Liggesmeyer, Prof. Dr. Stefan Jähnichen, Prof. Dr. habil. Helmut Balzert, Grade 1.24(magna cum laude), 2 June 2004
Dipl. Inf.	Technical University of Berlin (Master of Computer Science), Advisors: Prof. Dr. Stefan Jähnichen, Prof. Dr. Peter Pepper, Grade: 1.3 (very good). 2003
Dipl. Ing.	Berufsakademie Berlin (Master of Computer Engineering), Advisor: Prof. Dr. Rainer Höhne, Grade: 1.4 (very good), 1999

Industrial Experience

Hahn-Meitner-Institute	Project Management, Development of control systems for physical scattering experiments at the research reactor BER II and the synchrotron BESSY, 1996-2000
Siemens AG TS	Development of control systems for industrial railways (part of Dipl. thesis), 2000
Siemens AG CT PP 2	Consulting and research - Quality assurance of safety critical software systems, 2000-2004 (part of PhD thesis)

Teaching Experience

Research Methods	Lecturer at the Swinburne University of Technology (HIT 4010 Hit 9010), 2008- ongoing
Introduction to Systems Engineering	Lecturer at the University of Queensland (ENGG4000/ ENGG 7000), 2004- 2008
System Safety Engineering	Lecturer at the University of Queensland (ENGG7020, 2005 Teaching Evaluation 4.33 out of 5 possible marks), 2005- 2008
Compiler Construction	Lecturer at the Hasso-Plattner-Institut, 2003-2004
Bachelor Project UWG	Lead undergraduate students to develop a tool for the construction and analysis of modular fault trees. In this project, the students are studying the software development in a team. Furthermore, the complete software life cycle is covered. March 2002-February 2003

Bachelor Project Balance	Lead undergraduate students to develop a tool for the analysis and improvement of quality characteristics of software architectures. For the improvement, the structure of the system is transformed by the application of architectural patterns, which are specified as hypergraph transformation rules. February 2003 - February 2004
Artificial Intelligence	Lecturer at the BA Berlin, 2000-2003
Software Engineering Seminar	Seminar assistant at the Hasso-Plattner-Institute, 2002
Software Quality Management	Seminar assistant at the Hasso-Plattner-Institute, 2001
Software Construction I	Teaching assistant at the Hasso-Plattner-Institute, 2000-2001

Publications

Book chapter

1. Grunske L., Lindsay P., Bondarev E., Papadopoulos Y., Parker D., An Outline of an Architecture-Based Method for Optimizing Dependability Attributes of Software-Intensive Systems, R. de Lemos et al. (Eds.): Architecting Dependable Systems IV, LNCS 4615, 2007, pp. 188–209
2. Grunske L., Geiger L., Zündorf A., Van Eetvelde N., Van Gorp P., and Varro D., Using Graph Transformation for Practical Model Driven Software Engineering, book chapter, in Model-driven Software Development - Volume II of Research and Practice in Software Engineering, Beydeda S., Book M., Gruhn, V. (Eds.) ISBN 3-540-25613-X, 2005, pp. 91-119
3. Becker S., Grunske L., Mirandola R. and Overhage S., Performance Prediction of Component-Based Systems: A Survey from an Engineering Perspective, In R. Reussner, J. Stafford, and C. Szyperski, editors, Architecting Systems with Trustworthy Components, volume 3938 of LNCS, Springer, 2006 pp 169–192.
4. Grunske L., Kaiser B., and Reussner R.H., Specification and Evaluation of Safety Properties in a Component-based Software Engineering Process, book chapter, in Embedded System Development with Components, Lecture Notes in Computer Science vol. 3778, ISBN: 3-540-30644-7, Springer, 2005, pp. 249 - 274
5. Maydl W., Grunske L., Behavioral Types for Embedded Software –A Survey, book chapter, in Embedded System Development with Components, Lecture Notes in Computer Science vol. 3778, ISBN: 3-540-30644-7, Springer, 2005, pp. 82-106
6. Grunske L., Using a Graph Transformation System to Improve the Quality Characteristics of UML-RT Specifications, in H: Yang (ed.), Advances in Software Evolution with UML and XML, IDEA Group Publishing, ISBN 1-59140-621-8, 2005, pp. 19-45

Journal article

1. Zhang P., Li B., and Grunske L., Timed Property Sequence Chart, Journal of Systems and Software (JSS), Elsevier, accepted to appear.
2. Colvin R., Grunske L., and Winter K., Timed Behavior Trees for Failure Mode and Effects Analysis of Time-Critical Systems, Journal of Systems and Software (JSS), Elsevier, Volume 82, Issue 11, December 2008, pp. 2163-2182.
3. Grunske L., Joyce D., Quantitative Risk-based Security Prediction for Component-Based Systems with Explicitly Modelled Attack Profiles. Journal of Systems and Software (JSS), Elsevier, Elsevier, Volume 81, Issue 8, August 2008, pp. 1327-1345.
4. Grunske L., Winter K., Yatapanage N., Defining the Abstract Syntax of Visual Languages with Advanced Graph Grammars - A Case Study Based on Behavior Trees, Journal of Visual Languages and Computing (JVLC), Elsevier,. Volume 19, Issue 3, June 2008, pp 343-379
5. Grunske L., Early Quality Prediction of Component-Based Systems - A Generic Framework, Journal of Systems and Software (JSS), Elsevier, Volume 80, Issue 5, May 2007, pp. 678–686
6. Grunske L., Lück E., Application of Behavior-Preserving Transformations to Improve Non-Functional Properties of an Architecture Specification, International Journal of Computer & Information Science (IJCIS) Volume 5, Number 2, June 2004, 122-129

Conference publication (fully refereed; acceptance rate <33%)

1. Grunske L., Zhang P. Monitoring Probabilistic Properties, European Software Engineering Conference (ESEC) and the ACM SIGSOFT Symposium on the Foundations of Software Engineering (FSE) Amsterdam, August 22-28, 2009. ACM 2009, pp. 183-192, (acceptance rate <15%)
2. Aljazzar H., Fischer M., Grunske L., Kuntz M., Leitner F., Leue S., Safety Analysis of an Airbag System using Probabilistic FMEA and Probabilistic Counter Examples, International Conference on the Quantitative Evaluation of Systems, 2009. QEST 2009, IEEE Computer Society, accepted, to appear, (acceptance rate <25%)

3. Aleti A., Grunske L., Meedeniya I. and Moser I, Let the ants deploy your software - An ACO based deployment optimisation strategy, in Automated Software Engineering (ASE 2009), accepted as a short paper, to appear, (acceptance rate <31%)
4. Zhang P., Grunske L., Tang A., and Li B., A Formal Syntax for Probabilistic Timed Property Sequence Charts, in Automated Software Engineering (ASE 2009), accepted as a short paper, to appear, (acceptance rate <31%)
5. Bjoernander S., Grunske L., and Lundqvist K., Timed Simulation of Extended AADL-Based Architecture Specifications with Timed Abstract State Machines, Quality of Software Architectures (QoSA 2009), LNCS, Springer, 2009, pp. 101-115, (acceptance rate <25%)
6. Grunske L., Specification patterns for probabilistic quality properties. 30th International Conference on Software Engineering (ICSE 2008), Leipzig, Germany, May 10-18, 2008. ACM 2008, ISBN 978-1-60558-079-1, 31-40 (acceptance rate <15%)
7. Lumpe M., Grunske L., and Schneider J.-G., State Space Reduction Techniques for Component Interfaces, Proceedings of 11th Conference on Component-Based Software Engineering (CBSE 2008), Chaudron M.R.V. and Cyperski C.(Eds.), LNCS 5282, Karlsruhe, Germany, October 2008, pp. 130-145. (acceptance rate <25%)
8. Grunske L., Han J., A Comparative Study into Architecture-Based Safety Evaluation Methodologies Using AADL's Error Annex and Failure Propagation Models. 11th IEEE High Assurance Systems Engineering Symposium, HASE 2008, IEEE Computer Society, Nanjing, China, December 3 - 5, 2008, pp. 283-292. (acceptance rate <25%)
9. Grunske L., Winter K. Colvin R., Probabilistic Model-Checking Support for FMEA, Fourth International Conference on the Quantitative Evaluation of Systems, 2007. QEST 2007. ISBN: 978-0-7695-2883-0, IEEE Computer Society, pp. 119-128 (acceptance rate <25%)
10. Colvin R. Grunske L., Winter K., Probabilistic Timed Behavior Trees, in Proc. of Sixth International Conference on Integrated Formal Methods, IFM 2007, Oxford, UK, 2- 6 July, volume 4591 of LNCS, Springer 2007. pp. 156-175 (acceptance rate <25%)
11. Grunske L., Winter K. Colvin R., Timed Behavior Trees and their Application to Verifying Real-time Systems. In Proc. of 18th Australian Conference on Software Engineering (ASWEC 2007), 2007, pp. 211-222.
12. Grunske L., Identifying "Good" Architectural Design Alternatives with Multi-Objective Optimization Strategies, International Conference on Software Engineering (ICSE), Emerging Results, Shanghai, ACM 1-59593-085-X/06/0005, 20-28 May 2006, pp. 849-852 (acceptance rate <18%)
13. Grunske L., Towards an Integration of Standard Component-Based Safety Evaluation Techniques with SaveCCM, In proceedings of the conference Quality of Software Architectures (QoSA 2006), volume 4214 of LNCS, Springer, 2006, pp 199-213
14. Grunske L., Papadopoulos Y., Evolutionary Algorithms For Safety-Costs Trade-Off In Control System Design, INCOM 2006, 12th IFAC Symposium on Information Control in Manufacturing, pp. 249-254
15. Grunske L., Kaiser B., Papadopoulos Y., Model-Driven Safety Evaluation with State-Event-Based Component Failure Annotations, Eighth International ACM SIGSOFT Symposium on Component-based Software Engineering (CBSE 2005), St Luis, Missouri, May 14-15, Lecture Notes in Computer Science Volume 3489, Springer 2005. pp. 33-48 (acceptance rate <20%)
16. Grunske L., Formalizing Architectural Refactorings as Graph Transformation Systems, Sixth International Conference on Software Engineering, Artificial Intelligence, Networking and Parallel/Distributed Computing (SNPD05) May 23 - 25, Towson, Maryland, USA, IEEE Computer Society, 2005, pp. 324-329
17. Grunske L., Geiger L., Lawley M., A Graphical Specification of Model Transformations with Triple Graph Grammars, First European Conference Model Driven Architecture - Foundations and Applications, ECMDA-FA 2005, Nuremberg, Germany, November 7-10, 2005, Lecture Notes in Computer Science Volume 3748, Springer 2005. pp. 284-298
18. Grunske L., Lindsay P.A., Yatapanage N., Winter K. An Automated Failure Mode and Effect Analysis based on High-Level Design Specification with Behavior Trees, Fifth International Conference on Integrated Formal Methods, Eindhoven, 29 Nov -2 Dec, Lecture Notes in Computer Science, Volume 3771, 2005, pp. 129-149
19. Grunske L., Kaiser B., Automatic Generation of Analyzable Failure Propagation Models from Component-Level Failure Annotations, Fifth International Conference on Quality Software, Melbourne, Sep 19 -20, IEEE Computer Society, 2005, pp. 117-123
20. Papadopoulos Y., Grante C., Grunske L., Kaiser B., Continuous assessment of evolving designs and reuse of analyses in a model-based technique for semi-automatic Fault Tree and FMEA analysis of

complex systems, IFAC WC 05, 16th. World Congress, Int'l Federation of Automatic Control, Prague, July 4-8, CD Proceedings, 2005

21. Grunske L. and Kaiser B., An Automated Dependability Analysis Method for COTS-Based Systems, 4th International Conference on COTS-Based Software Systems, ICCBSS 2005, Lecture Notes in Computer Science Volume 3412, Springer, Feb 2005, pp 178-190 (acceptance rate <33%)
22. Grunske L., Application of Behavior-Preserving Transformations to Improve Non-Functional Properties of an Architecture Specification, in Proceedings of the 4th International Conference on Software Engineering, Artificial Intelligence, Networking, and Parallel/Distributed Computing (SNPD'03), Lübeck, October 16-18, 2003, pp. 439-446

Other conference and workshop publications

1. Aleti A., Bjoernander S., Grunske L., and Meedeniya I., ArcheOpterix: An extendable tool for architecture optimization of AADL models, in Model-based Methodologies for Pervasive and Embedded Software (MOMPES), Workshop at ICSE 2009, ACM and IEEE Digital Libraries, 2009, pp. 61-71.
2. Grunske L., Neumann R., Process Components for Quality Evaluation and Quality Improvement, in Second Workshop on Method Engineering for Object-oriented and Component-Based Development, OOPSLA 2004, pp. 51-62
3. Grunske L., Automated Software Architecture Evolution with Hypergraph Transformation, in Proceedings of the 7th International Conference on Software Engineering and Application (SEA 03), Marina del Ray, Nov. 3-5, 2003, pp.613-621
4. Grunske L., A Visual Architecture Description Language for Embedded Systems with Hierarchical Typed Hypergraphs, in Proceedings 3rd Workshop on Domain-Specific Modeling at the 18th ACM SIGPLAN Conference on Object-Oriented Programming, Systems, Languages and Applications (OOPSLA 03), Anaheim, 2003, pp.1-8
5. Grunske L., Transformational Patterns for the Improvement of Safety Properties in Architectural Specifications, Proceedings of The Second Nordic Conference on Pattern Languages of Programs (VikingPLoP 03), Bergen/Norge, 2003
6. Grunske L., Annotation of Component Specifications with Modular Analysis Models for Safety Properties, Proceedings of the 1st International Workshop on Component Engineering Methodology, Erfurt (WCEM 03), September 22, 2003, pp. 31-41
7. Grunske L., Neumann R., Quality Improvement by Integrating Non-Functional Properties in Architecture Specification, Proceedings of the 2nd Workshop on Evaluating and Architecting System dependability (EASY 02) at ASPLOS-X, San Jose/California, October 3-6, 2002, pp. 23-33
8. Neumann R., Grunske L., Kaiser B., Hierarchical Software Quality Models - A step towards quantifying non-functional properties, Proceedings of the 12th International Workshop on Software Measurement, Magdeburg, Shaker 2002, pp. 107-124
9. Grunske L., Transformational Pattern for High-Level-Architectural Connectors, Proceedings of The First Nordic Conference on Pattern Languages of Programs (VikingPLoP 02), Helsingør/ Denmark, Microsoft Business Press, September 20-22, 2002, pp.81-91

German publications

1. Grunske L., Bewertungstechniken - eine allgemeine Übersicht (Chapter 14), Handbuch der Software-Architektur, Ralf Reussner und Wilhelm Hasselbring (Eds), ISBN 3-89864-372-7, dpunkt.verlag, 2006, pp. 277-294
2. Grunske L., Kaiser B., Bewertungstechniken für die Systemsicherheit (Chapter 15), Handbuch der Software-Architektur, Ralf Reussner und Wilhelm Hasselbring (Eds), ISBN 3-89864-372-7, dpunkt.verlag, 2006, pp. 295-310

Supervised Students

Ernest Wong Kwok Wai, Bachelor of Engineering (Honours Thesis), (graduated 07/2007)
David Joice, Bachelor of Engineering (Honours Thesis), (graduated 04/2006)
Maslina Abdul Aziz, Master of Engineering in Software Engineering, (graduated 04/2006)
David Ching Lim Lee, Master of Engineering in Software Engineering (graduated 10/2005)
Jie Chen, Master of Science (Information Technology) (graduated 10/2005)

Current Students

Indika Meedeniya, PhD, Doctor of Philosophy (09/2008-ongoing)

Aldeida Aleti, PhD, Doctor of Philosophy (10/2008-ongoing)

Wei Xi, PhD, Doctor of Philosophy (08/2009-ongoing)

Cameron Hine, PhD, Doctor of Philosophy (Associate Supervisor 05/2008-ongoing)

Funding and Grants

Jun Han, Lars Grunske, Antony Tang , Safe and Reliable Integration and Deployment Architectures for Automotive Software Systems, AutoCRC,162000 AU\$, 2008-2010

Lars Grunske, Markus Lumpe, Identification and Formal Specification of Hazard Condition of Automotive Programmable Electronic Systems, AutoCRC, 116000AU\$, 2009-2011

Lars Grunske, Markus Lumpe, Antony Tang, A Practical and Concise Approach for the Specification of System Properties – An Investigation of Property Specification Patterns, Faculty Grants Scheme, 12506AU\$, 2009-2010

Lars Grunske, Irene Moser, Performance Evaluation of Multi-Objective Optimisation Strategies in the Context of Architecture Optimisation, Faculty Grants Scheme, 12506AU\$, 2009-2010

Lars Grunske UQ New Staff Research Start-Up Fund/ Early Career Research Grant, Project Design-Time Quality Evaluation for Complex Component-based Systems, 11800AU\$, 2005-2006

Professional Activities

Organisation and Chairing of Conferences

Program Chair, CBSE 2010, 12th International Symposium on Component Based Software Engineering, Prague, Czech Republic

Program Chair, SETE 2006, International Conference on System Engineering/Test and Evaluation, Melbourne, Australia

Steering Committee, ISARCS 2010, International Symposium on Architecting Critical Systems, Prague, Czech Republic

Program Committee Member

ASWEC 2007-10, Australian Software Engineering Conference

CBSE 2006-10, International Symposium on Component-Based Software Engineering

ICCECS 2010, 15th IEEE International Conference on Engineering of Complex Computer Systems, (ICCECS)

ICCBSS 2008, IEEE International Conference on Composition-Based Software Systems (ICCBSS)

SAFECOMP 2008, International Conference on Computer Safety, Reliability and Security

ECBSE 2007-09, Euromicro Conference on Software Engineering and Advanced Applications (SEAA) Component-Based Software Engineering Track

WADS 2007-09, DSN Workshop on Architecting Dependable Systems, Edinburgh, Scotland - UK

IWSSA 2006-09, International Workshop on System/Software Architecture

DCDS 2007, 1st IFAC Workshop on Dependable Control of Discrete Systems

MODDM 2006, Workshop on MOdel Driven Development for Middleware (MODDM)

IWSSA 2006-09, International Workshop on System/Software Architecture

SETE 2005, International Conference on System Engineering/Test and Evaluation

Shepherd for VikingPLOP 2004, PLOP 2004-2005, EuroPLOP 2005

OOPSLA 2004 (Workshop Committee Member), the 19th Annual ACM Conference on Object-Oriented Programming, Systems, Languages and Applications, Vancouver, British Columbia, Canada

Languages

Native German,

Speaking and writing knowledge in English and Russian