CURRICULUM VITAE

EUROPEAN FORMAT

PERSONAL INFORMATION

Name, Surname	Maurice H. ter Beek
Address	c/o Istituto di Scienza e Tecnologie dell'Informazione (ISTI)
	Consiglio Nazionale delle Ricerche (CNR)
	Area della Ricerca CNR di Pisa
	Via G. Moruzzi 1, 56124 Pisa (PI), Italy
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Website	http://fmt.isti.cnr.it/~mtbeek/
Nationality	Dutch

WORK EXPERIENCE

Dates (from – to)	2003 - present
Name and address of employer	ISTI-CNR, Pisa, Italy
Occupation or position held	Researcher [Ricercatore III livello],
	head of the lab Formal Methods and Tools (FMT) as of 1 August, 2019
Main activities and responsibilities	I am active in research on team automata and on formal methods and model-checking tools, in particular applied to Service-Oriented Computing and to Software Product Line Engineering.

Dates (from – to)	July 2015
Name and address of employer	LIACS (Leiden Institute of Advanced Computer Science), Leiden University, The Netherlands
Occupation or position held	Guest professor with a Short-Term Mobility research grant from CNR
Main activities and responsibilities	Programme "Compatibility and receptiveness in team automata: the case of masters and slaves"

Dates (from – to)	2012 - 2013
Name and address of employer	LIACS (Leiden Institute of Advanced Computer Science), Leiden University, The Netherlands
Occupation or position held	Lecturer
Main activities and responsibilities	Software Engineering (2012), *Studievaardigheden (2012),* Requirements Engineering (2013)

Dates (from – to)	2003, 2007
Name and address of employer	Dipartimento di Informatica, Università di Pisa, Italy
Occupation or position held	Teaching assistant [nel 2007 con nomina di cultore della materia]
Main activities and responsibilities	Software Engineering (2007), Laboratorio di Introduzione alla Programmazione B (2003)

Dates (from – to)	2001
Name and address of employer	LIACS, Leiden University, The Netherlands
Occupation or position held	Lecturer
Main activities and responsibilities	Formal Languages and Automata, Introduction to Fundamental Computer Science, Theory of Concurrency

Dates (from – to)	1994 - 2000
Name and address of employer	LIACS, Leiden University, The Netherlands
Occupation or position held	Teaching assistant
Main activities and responsibilities	Formal Languages and Automata, Introduction to Fundamental Computer Science, Theory of Concurrency, Artificial Intelligence, Operating Systems, Logic for Computer Scientists, Theory of Databases

EDUCATION AND TRAINING

Dates (from – to)	23/1/2015 - 23/1/2021
Name and type of organisation	MIUR [tornata 2013 di cui al DD 161 del 28/1/2013]
Title of qualification awarded	Abilitazione Scientifica Nazionale alle Funzioni di Professore Universitario di Seconda Fascia, classe di concorso 09/H1 - "Sistemi di Elaborazione delle Informazioni"
Dates (from – to)	19/1/2015 - 19/1/2021
Name and type of organisation	MIUR [tornata 2013 di cui al DD 161 del 28/1/2013]
Title of qualification awarded	Abilitazione Scientifica Nazionale alle Funzioni di Professore Universitario di Seconda Fascia, classe di concorso 01/B1 - "Informatica"
Dates (from – to)	2/3/2009
Name and type of organisation	Concorso pubblico per l'assunzione con contratto a tempo indeterminato del CNR
Title of qualification awarded	Idoneità da I° Ricercatore II livello, Area Scientifica "Scienze Informatiche"
Dates (from – to)	January, August 2005
Name and type of organization	Department of Mathematics and Computer Science, University of Antwerp, Belgium
Occupation or position held	SegraVis (EU Network of Excellence) fellow
Dates (from – to)	2003
Name and type of organisation	ISTI-CNR, Pisa, Italy
Occupation or position held	ERCIM (European Research Consortium for Informatics and Mathematics) fellow
Dates (from – to)	2002
Name and type of organisation	Computer and Automation Research Institute, Academy of Sciences, Budapest, Hungary
Occupation or position held	ERCIM fellow
Dates (from – to)	2000-2001
Name and type of organisation	Dipartimento di Informatica, Università di Pisa, Italy
Occupation or position held	EU Socrates grant
Dates (from – to)	1996-2001
Name and type of organisation	Leiden University, The Netherlands
Title of qualification awarded	Ph.D. in Computer Science
Dates (from – to)	1995-1996
Name and type of organisation	Department of General Computer Science, Eötvös Loránd University, Budapest, Hungary
Occupation or position held	Student of Computer Science
Dates (from – to)	1995-1996
Name and type of organisation	Computer and Automation Research Institute, Academy of Sciences, Budapest, Hungary
Occupation or position held	Cultural exchange scholarship of Hungarian Ministry of Culture and Education
Dates (from – to)	1990-1996
Name and type of organisation	Department of Mathematics and Computer Science, Leiden University, Leiden, The Netherlands
Title of qualification awarded	M.Sc. in Computer Science

RESEARCH ACTIVITIES

Research sectors	Formal Methods, Model Checking, Software Product Line Engineering, Software Engineering, Formal languages and automata, Service-Oriented Computing, Theoretical Computer Science
H-index	22 (Google Scholar) 16 (Scopus) 10 (Web of Science)

| Recent Scientific Activities. | Participation in research projects: |

Recent Scientific Activities.

Participation in research projects:
- H2020-Shift2Rail-RIA-881775 project 4SECURail (Formal methods and CSIRT for the railway sector), 2019-2021
- MIUR-PRIN 2017FTXR7S project IT MaTTerS (Methods and Tools for Trustworthy Smart Systems), 2019-2022
- POR-FESR-2014-2020 project STINGRAY (SmarT station INtelliGent RAilwaY), 2018-2020
- H2020-Shift2Rail-RIA-777561 project ASTRail (SAtellite-based Signalling and Automation SysTems on Raiways along with Formal Method and Moving Block validation), 2017-2019
- EU FP7-ICT-619583 project LearnPAd (Model-Based Social Learning for Public Administrations), 2014-2016
- EU FP7-ICT-600708 project QUANTICOL (A Quantitative Approach to Management and Design of Collective and Adaptive Behaviours), 2013-2017
- MIUR-PRIN 2010LHT4KM project CINA (Composizionalità, Interazione, Negoziazione, Autonomicità per la società ICT futura), 2012-2016
- PAR-FAS-2007-2013 project TRACE-IT (Train Control Enhancement via Information Technology), 2011-2013
- MIUR-PRIN 2007XKEHFA project D-ASAP (Dependable Adaptable Software Architectures for Pervasive Computing), 2008-2011
- EU FP6-IP-IST-016004 project SENSORIA (Software Engineering for Service-Oriented Overlay Computers), 2005-2010

Editorial board member of journals Science of Computer Programming (ISSN 0167-6423), PeerJ Computer Science (ISSN 2376-5992), and ERCIM News (ISSN 0926-4981)

Participation in conference coordination:
- Steering Committee: SPLC (2018-present), VaMoS (2018-present), WWV (2014-2016), FMSPLE (2012-2016) and ISARCS (2007-2013)
- General chair: FMICS-AVoCS 2016
- Workshop chair: DisCoTec 2019, FM 2018, SPLC 2014, iFM & ABZ 2012 and SEFM 2010
- PC chair: FMICS 2020, FM 2019, CAS 2018, SOAP 2017, VaMoS 2017, SOAP 2016, FORECAST 2016, WWV 2014-2015, FMSPLE 2014, FMSPLE 2012 and WS-FM 2012
- PC member: SPLC 2013-2020, VaMoS 2013-2020, SEFM 2018-2020, FormaliSE 2018-2020, ABZ 2020, FMICS 2017-2019, AVoCS 2017-2019, SPIN 2019, FASE 2019, ICSR 2016-2018, FMSPLE 2013-2016, ICTCS 2014, WS-FM 2012-2014, ACSD 2011 and WWV 2011

Selected publications (2010-2020)

Journal papers:
- D. Basile, M.H. ter Beek, P. Degano, A. Legay, G.-L. Ferrari, S. Gnesi & F. Di Giandomenico, Controller synthesis of service contracts with variability. Science of Computer Programming (2020)
- D. Basile, M.H. ter Beek & A. Legay, Timed Service Contract Automata. Innovations in Systems and Software Engineering (2019)
- M.H. ter Beek, F. Damiani, S. Gnesi, F. Mazzanti & L. Paolini, On the Expressiveness of Modal Transition Systems with Variability Constraints. Science of Computer Programming 169 (2019), 1–17
- M.H. ter Beek, A. Legay, A. Vandin & A. Lluch Lafuente, A framework for quantitative modeling and analysis of highly (re)configurable systems. IEEE Transactions on Software Engineering (2018)
- M.H. ter Beek, A. Fantechi, S. Gnesi & F. Mazzanti, Modelling and Analysing Variability in Product Families: Model Checking of Modal Transition Systems with Variability Constraints. To appear in Journal of Logical and Algebraic Methods in Programming 85, 2 (2016), 287–315
- M.H. ter Beek & J. Kleijn, On Distributed Cooperation and Synchronised Collaboration. Journal of Automata, Languages and Combinatorics 19, 1–4 (2014), 17–32
- M.H. ter Beek & J. Kleijn, Vector Team Automata. Theoretical Computer Science 429 (2012), 21–29
- M.H. ter Beek, A. Fantechi, S. Gnesi & F. Mazzanti, A state/event-based model-checking approach for the analysis of abstract system properties. Science of Computer Programming 76 (2011), 119-135

Edited special issues:
- M.H. ter Beek & A. Legay, Special Issue on Quantitative Variability Modelling and Analysis. International Journal on Software Tools for Technology Transfer (2019)
- M.H. ter Beek, S. Gnesi & A. Knapp, Special Issue on Formal Methods and Automated Verification of Critical Systems. International Journal on Software Tools for Technology Transfer 20, 4 (2018)
- M.H. ter Beek, S. Gnesi & A. Knapp, Special Issue on Formal Methods for Transport Systems. International Journal on Software Tools for Technology Transfer 20, 3 (2018)
- M.H. ter Beek & M. Loreti, Special Issue on FORmal methods for the quantitative Evaluation of Collective Adaptive SysTems. ACM Transactions on Modeling and Computer Simulation 28, 2 (2018)

- M.H. ter Beek & A. Lluch Lafuente, Special Issue on Automated Specification and Verification of Web-based Applications. Journal of Logical and Algebraic Methods in Programming 87 (2017)
- M.H. ter Beek, A. Lisitsa, A.P. Nemytykh & A. Ravara, Special Issue on Automated Verification of Programs and Web Systems. Journal of Logical and Algebraic Methods in Programming 85, 5 (2016)
- M.H. ter Beek, D. Clarke & I. Schaefer, Special Issue on Formal Methods in Software Product Line Engineering. Journal of Logical and Algebraic Methods in Programming (2016) 85, 1

Conference papers:
- M.H. ter Beek, S. van Loo, E.P de Vink & T.A.C. Willemse, Family-Based SPL Model Checking Using Parity Games with Variability. In Proceedings 23rd International Conference on Fundamental Approaches to Software Engineering (FASE'20), LNCS, Springer, 2020
- M.H. ter Beek, A. Legay, A. Lluch Lafuente, & A. Vandin, Variability meets Security: Quantitative Security Modeling and Analysis of Highly Customizable Attack Scenarios. In Proceedings 14th International Working Conference on Variability Modelling of Software-Intensive Systems (VaMoS'20), ACM, 2020
- M.H. ter Beek, A. Borälv, A. Fantechi, A. Ferrari, S. Gnesi, C. Löfving & F. Mazzanti, Adopting Formal Methods in an Industrial Setting: The Railways Case. In Proceedings 3rd World Congress on Formal Methods (FM'19), LNCS 11800, Springer, 2019, 762–772.
- M.H. ter Beek, K. Schmid & H. Eichelberger, Textual Variability Modeling Languages: An Overview and Considerations. In Proceedings 23rd International Systems and Software Product Line Conference (SPLC'19), ACM, 2019, 151–157
- M.H. ter Beek, F. Damiani, M. Lienhardt, F. Mazzanti & L. Paolini, Static Analysis of Featured Transition Systems. In Proceedings 23rd International Systems and Software Product Line Conference (SPLC'19), ACM, 2019, 39–51
- D. Basile, M.H. ter Beek, A. Ferrari & A. Legay, Modelling and Analysing ERTMS L3 Moving Block Railway Signalling with Simulink and UPPAAL SMC. In Proceedings 24th International Conference on Formal Methods for Industrial Critical Systems (FMICS'19), LNCS 11687, Springer, 2019, 1–21
- D. Basile, M.H. ter Beek & R. Pugliese, Bridging the Gap between Supervisory Control and Coordination of Services: Synthesis of Orchestrations and Choreographies. In Proceedings 21st International Conference on Coordination Models and Languages (COORDINATION'19), LNCS 11533, Springer, 2019, 129–147
- D. Basile, M.H. ter Beek & V. Ciancia, Statistical Model Checking of a Moving Block Railway Signalling Scenario with Uppaal SMC. In Proceedings 8th International Symposium on Leveraging Applications of Formal Methods, Verification and Validation (ISoLA'18), LNCS 11245, Springer, 2018, 372–391
- D. Basile, M.H. ter Beek, A. Legay & L.-M. Traonouez, Orchestration Synthesis for Real-Time Service Contracts. In Proceedings 12th International Conference on Verification and Evaluation of Computer and Communication Systems (VECoS'18), LNCS 11181, Springer, 2018, 31–47
- D. Basile, M.H. ter Beek & S. Gnesi, Modelling and Analysis with Featured Modal Contract Automata. In Proceedings 22nd International Systems and Software Product Line Conference (SPLC'18), ACM, 2018, 11–16
- M.H. ter Beek, A. Fantechi & S. Gnesi, Product line models of large cyber-physical systems: the case of ERTMS/ETCS. In Proceedings 22nd International Systems and Software Product Line Conference (SPLC'18), ACM, 2018, 208–214
- D. Basile, M.H. ter Beek, A. Fantechi, S. Gnesi, F. Mazzanti, A. Piattino, D. Trentini & A. Ferrari, On the Industrial Uptake of Formal Methods in the Railway Domain: A Survey with Stakeholders. In Proceedings 14th International Conference on Integrated Formal Methods (IFM'18), LNCS 11023, Springer, 2018, 20–29
- A. Vandin, M.H. ter Beek, A. Legay & A. Lluch Lafuente, QFLan: A Tool for the Quantitative Analysis of Highly Reconfigurable Systems. In Proceedings 22nd International Symposium on Formal Methods (FM'18), LNCS 10951, Springer, 2018, 329–337
- M.H. ter Beek, J. Carmona, R. Hennicker & J. Kleijn, Communication Requirements for Team Automata. In Proceedings 19th International Conference on Coordination Models and Languages (COORDINATION'17), LNCS 10319, Springer, 2017, 256–277
- M.H. ter Beek, E.P de Vink & T.A.C. Willemse, Family-Based Model Checking with mCRL2. In Proceedings 20th International Conference on Fundamental Approaches to Software Engineering (FASE'17), LNCS 10202, Springer, 2017, 387–405
- M.H. ter Beek, M.A. Reniers & E.P. de Vink, Supervisory Controller Synthesis for Product Lines using CIF3. In Proceedings 7th International Symposium on Leveraging Applications of Formal Methods, Verification and Validation: Foundational Techniques (ISoLA'16), LNCS 9952, Springer, 2016, 856–873
- M.H. ter Beek, E.P. de Vink & T.A.C. Willemse, Towards a Feature mu-Calculus Targeting SPL Verification. In Proceedings 7th International Workshop on Formal Methods and Analysis in Software Product Line Engineering (FMSPLE'16), EPTCS 206, arXiv:1604.00350v1 [cs.LO], 2016, 61–75
- M.H. ter Beek, F. Damiani, S. Gnesi, F. Mazzanti & L. Paolini. From Featured Transition Systems to Modal Transition Systems with Variability Constraints. In Proceedings 13th International Conference on Software Engineering and Formal Methods (SEFM'15), LNCS 9276, Springer, 2015, 344–359
- M.H. ter Beek, A. Fantechi, S. Gnesi & F. Mazzanti, Using FMC for Family-Based Analysis of Software Product Lines. In Proceedings 19th International Software Product Line Conference (SPLC'15), ACM, 2015, 432–439

- M.H. ter Beek, A. Legay, A. Lluch Lafuente & A. Vandin, Statistical Analysis of Probabilistic Models of Software Product Lines with Quantitative Constraints. In Proceedings 19th International Software Product Line Conference (SPLC'15), ACM, 2015, 11–15
- M.H. ter Beek, A. Legay, A. Lluch Lafuente & A. Vandin, Quantitative Analysis of Probabilistic Models of Software Product Lines with Statistical Model Checking. In Proceedings 6th International Workshop on Formal Methods for Software Product Line Engineering (FMSPLE'15), EPTCS 182, arXiv:1504.03476v1 [cs.LO], 2015, 56–70
- T. Belder, M.H. ter Beek & E.P. de Vink, Coherent branching feature bisimulation. In Proceedings 6th International Workshop on Formal Methods for Software Product Line Engineering (FMSPLE'15), EPTCS 182, arXiv:1504.03474v1 [cs.LO], 2015, 14–30
- M.H. ter Beek & E.P. de Vink, Towards Modular Verification of Software Product Lines with mCRL2. In Proceedings 6th International Symposium on Leveraging Applications of Formal Methods, Verification and Validation (ISoLA'14), LNCS 8802, Springer, 2014, 368–385
- M.H. ter Beek, A. Fantechi & S. Gnesi, Challenges in Modelling and Analyzing Quantitative Aspects of Bike-Sharing Systems. In Proceedings 6th International Symposium on Leveraging Applications of Formal Methods, Verification and Validation (ISoLA'14), LNCS 8802, Springer, 2014, 351–367.
- M.H. ter Beek & E.P. de Vink, Software Product Line Analysis with mCRL2. In Proceedings 18th International Software Product Line Conference (SPLC'14), ACM, 2014, 78–85
- M.H. ter Beek & F. Mazzanti, VMC: Recent Advances and Challenges Ahead. In Proceedings 18th International Software Product Line Conference (SPLC'14), ACM, 2014, 70–77
- M.H. ter Beek & E.P. de Vink, Using mCRL2 for the Analysis of Software Product Lines. In Proceedings 2nd Workshop on Formal Methods in Software Engineering (FormaliSE'14), IEEE, 2014, 31–37
- M.H. ter Beek, A. Lluch Lafuente & M. Petrocchi, Combining Declarative and Procedural Views in the Specification and Analysis of Product Families. In Proceedings 17th International Software Product Line Conference (SPLC'13), ACM, 2013, 10–17
- M.H. ter Beek, F. Gadducci & F. Santini, Validating Reconfigurations of Reo Circuits in an e-Banking Scenario. In Proceedings 4th International ACM SIGSOFT Symposium on Architecting Critical Systems (ISARCS'13), ACM, 2013, 39–47
- M.H. ter Beek, S. Gnesi & F. Mazzanti, Demonstration of a model checker for the analysis of product variability. In Proceedings 16th International Software Product Line Conference (SPLC'12), ACM, 2012, 242–245
- M.H. ter Beek, F. Mazzanti & A. Sulova, VMC: A Tool for Product Variability Analysis. In Proceeding 18th International Symposium on Formal Methods (FM'12), LNCS 7436, Springer, 2012, 450–454
- P. Asirelli, M.H. ter Beek, A. Fantechi & S. Gnesi, Formal Description of Variability in Product Families. In Proceedings 15th International Software Product Line Conference (SPLC'11), IEEE, 2011, 130–139
- P. Asirelli, M.H. ter Beek, A. Fantechi & S. Gnesi, A Model-Checking Tool for Families of Services. In Proceedings 13th International Conference on Formal Methods for Open Object-based Distributed Systems (FMOODS'11), LNCS 6722, Springer, 2011, 44–58
- P. Asirelli, M.H. ter Beek, A. Fantechi & S. Gnesi, A Logical Framework to Deal with Variability. In Proceedings 8th International Conference on Integrated Formal Methods (IFM'10), LNCS 6396, Springer, 2010, 43–58

Book chapters:
- S. Gnesi & M.H. ter Beek, From the Archives of the Formal Methods and Tools Lab: Axiomatising and Contextualising ACTL. In Models, Languages and Tools for Concurrent and Distributed Program-ming (M. Boreale, F. Corradini, M. Loreti & R. Pugliese, eds.), LNCS 11665, Springer, 2019, 219–235
- M.H. ter Beek, A. Fantechi, S. Gnesi & F. Mazzanti, States and Events in KandISTI: A Retrospective. In Models, Mindsets, Meta: The What, the How, and the Why Not? (T. Margaria, S. Graf & K.G. Larsen, eds.), LNCS 11200, Springer, 2019, 110–128
- M.H. ter Beek, S. Gnesi & F. Mazzanti, From EU Projects to a Family of Model Checkers. Software, Services and Systems (R. De Nicola & R. Hennicker, eds.), LNCS 8950, Springer, 2015, 312–328
- M.H. ter Beek & J. Kleijn, Shuffles and Synchronized Shuffles: A Survey. In Discrete Mathematics and Computer Science (Gh. Paun, G. Rozenberg & A. Salomaa, eds.), Editura Academiei Romane (The Publishing House of the Romanian Academy), Bucuresti, Romania, 2014, 37–50
- M.H. ter Beek, S. Gnesi, D. Latella, M. Massink, M. Sebastianis & G. Trentanni, An Application of Stochastic Model Checking in the Industry: User-centered Modeling and Analysis of Collaboration in thinkteam. Chapter 9 in Formal Methods for Industrial Critical Systems: A Survey of Applications (S. Gnesi & T. Margaria, eds.), John Wiley & Sons, Inc., 2013, 179–203
- M.H. ter Beek, E. Csuhaj-Varju, M. Holzer & Gy. Vaszil, Cooperating Distributed Grammar Systems: Components with Nonincreasing Competence. In Computation, Cooperation, and Life (J. Kelemen & A. Kelemenova, eds.), LNCS 6610, Springer, 2011, 70–89
- M.H. ter Beek, A. Lapadula, M. Loreti & C. Palasciano, Analysing Robot Movement Using the Sensoria Methods. In Rigorous Software Engineering for Service-Oriented Systems (M. Wirsing & M. Holzl, eds.), LNCS 6582, Springer, 2011, 678–697
- M.H. ter Beek, Sensoria Results Applied to the Case Studies. In Rigorous Software Engineering for Service-Oriented Systems (M. Wirsing & M. Holzl, eds.), LNCS 6582, Springer, 2011, 655–677

Pisa, 13 January 2020