

# Thom Badings



## // Personalia

**First name**  
T.S. (Thom)

**Surname**  
Badings

**Nationality**  
Dutch

**Date of birth**  
July 17th, 1995

**E-mail address**  
thom.badings@ru.nl

## // Expertise

Holistic problem solving  
Mathematical modeling  
Verification and optimization  
Programming (Python, MATLAB)

## // Hobbies

Playing water polo  
Composing / playing music  
Developing websites

## // Education

- Aug 2017 - Oct 2019** Master Industrial Engineering and Management, Cum Laude, Faculty of Science and Engineering, University of Groningen, The Netherlands  
*Average grade 8.7 - Graduation project concluded with mark 9.5. Specialization: Smart Systems in Control and Automation*
- Aug 2013 - July 2017** Bachelor Industrial Engineering and Management, Faculty of Science and Engineering, University of Groningen, The Netherlands  
*Average grade 7.8 - Specializations: (a) Product and Process Technology, (b) Production Technology and Logistics*
- Feb 2014 - July 2016** Honours College Bachelor programme, University of Groningen, The Netherlands  
*Average grade 8.4*
- Aug 2007 - July 2013** Pre-university secondary education (VWO), Meander College, Zwolle  
*Specialization: science and technology (natuur & techniek); Final paper about research on factors of skill and luck in Texas Hold 'em Poker, concluded with mark 9.4*

## // Work experience

- Sep 2020 - Today** PhD candidate, Radboud University  
*Involved as PhD candidate and academic researcher in the PrimaVera consortium on Predictive Maintenance*
- Feb 2020 - Aug 2020** Consultant, power system analysis, DNV GL  
*Tasks included:*  
- Identifying market opportunities, developing existing services, writing commercial offers, and establishing new services;  
- Developing new tools or models to optimize dispatch decisions
- May 2019 - Dec 2019** Graduate intern & junior consultant, DNV GL  
*Graduation project at DNV GL Oil & Gas in Groningen, which was continued for two more months, after the internship was finished in October 2019*
- Sep 2018 - May 2019** Assistant in course development, University of Groningen  
*Involvement in the development of new courses for the first year of the Bachelor programme of Industrial Engineering and Management*
- Sep 2014 - July 2018** Teaching assistant, University of Groningen  
*For multiple courses including Global Supply Chain Management, Algorithmics, Signals and Systems, and Orientation to IEM*
- Aug 2007 - July 2013** Various jobs as all-round web developer  
*Including jobs as web designer, programmer, and text writer*

## // Secondary activities

- Sep 2017 - Oct 2018** Vice-chairman of G.S.Z.C. De Walvisch (water polo club)  
*Full year board function*
- Sep 2015 - Oct 2016** Treasurer of G.S.Z.C. De Walvisch  
*Full year board function; subsequently included a three-year membership of the audit committee*
- Sep 2014 - Jan 2016** General member of the IEM Programme Committee  
*Included the role as student representative in the IEM Evaluation Committee*

# Thom Badings

## // Dissertations

- 1) Badings, T.S. (2019), *MSc Thesis, "Buildings-to-Grid Integration for Demand-Side Flexibility in Power Systems with Uncertain Generation,"* University of Groningen.  
Awarded with grade 9 out of 10  
Link: <http://fse.studenttheses.ub.rug.nl/id/eprint/19378> (open access)
- 2) Badings, T.S. (2019), *MSc Design Project, "Data Validation and Reconciliation for the Assessment of Gas Transport Systems,"* DNV GL Oil & Gas Groningen, University of Groningen.  
Awarded with grade 9.5 out of 10  
Link: <http://fse.studenttheses.ub.rug.nl/id/eprint/21127>

## // Publications

- 1) Badings, T.S., Rostampour, V. and Scherpen, J.M.A. (2019), "Distributed Building Energy Storage Units for Frequency Control Service in Power Systems," *IFAC Workshop on Control of Smart Grid and Renewable Energy Systems*, June 2019.  
Link: <https://doi.org/10.1016/j.ifacol.2019.08.190> (open access)
- 2) Rostampour, V., Badings, T.S. and Scherpen, J.M.A. (2019), "Buildings-to-Grid Integration with High Wind Power Penetration," *2019 IEEE 58th Conference on Decision and Control (CDC)*, December 2019.  
Link: <https://doi.org/10.1109/CDC40024.2019.9030242>
- 3) Badings, T.S. and Van Putten, D.S. (2020), "Data Validation and Reconciliation for Error Correction and Gross Error Detection in Multiphase Allocation Systems," *Journal of Petroleum Science & Engineering*, 195.  
Link: <https://doi.org/10.1016/j.petrol.2020.107567>
- 4) Rostampour, V., Badings, T.S. and Scherpen, J.M.A. (2020), "Demand Flexibility Management for Buildings-to-Grid Integration with Uncertain Generation," *Energies*, 13(24).  
Link: <https://doi.org/10.3390/en13246532> (open access)
- 5) Thom Badings, Arnd Hartmanns, Nils Jansen & Marnix Suilen (2021), "Balancing Wind and Batteries: Towards Predictive Verification of Smart Grids," *NFM 2021*.  
Link: <https://arxiv.org/pdf/2101.12496.pdf> (open access)
- 6) Thom Badings, Nils Jansen, Hasan Poonawala & Marielle Stoelinga (2021), "Filter-Based Abstractions with Correctness Guarantees for Planning under Uncertainty," *arXiv preprint arXiv:2103.02398*.  
Link: <https://arxiv.org/pdf/2103.02398.pdf> (open access)
- 7) Thom Badings, Alessandro Abate, Nils Jansen, David Parker, Hasan Poonawala & Marielle Stoelinga (2022), "Sampling-Based Robust Control of Autonomous Systems with Non-Gaussian Noise," *AAAI 2022* (distinguished paper award).  
Link: <https://ojs.aaai.org/index.php/AAAI/article/view/21201> (open access)
- 8) Thom Badings, Murat Cubuktepe, Nils Jansen, Sebastian Junges, Joost-Pieter Katoen & Ufuk Topcu (2022), "Scenario-Based Verification of Uncertain Parametric MDPs," *STTT 2022* (to appear).  
Link: <https://arxiv.org/abs/2112.13020> (open access)
- 9) Thom Badings, Nils Jansen, Sebastian Junges, Marielle Stoelinga & Matthias Volk (2022), "Sampling-Based Verification of CTMCs with Uncertain Rates," *CAV 2022*.  
Link: [https://link.springer.com/content/pdf/10.1007/978-3-031-13188-2\\_2](https://link.springer.com/content/pdf/10.1007/978-3-031-13188-2_2) (open access)