Dr. Ir. Birgit van Huijgevoort
Curriculum Vitae

Date of birth	August 10, 1994
Mail	`b.c.v.huijgevoort@tue.nl`
Nationality	Dutch

WORK EXPERIENCE AND EDUCATION

PhD Candidate at Control systems group
2018 - 2023

Eindhoven University of Technology

Research: Automatic control synthesis with temporal logic requirements. Stochastic, uncertain and nonlinear systems.

Supervisors: Dr. Ir. S. Haesaert and Prof. S. Weiland

MSc. Systems and Control
2016 - 2018

Eindhoven University of Technology

Mechanical Engineering and Electrical Engineering

Thesis: Structure-preserving discretization of port-Hamiltonian distributed parameter systems.

Supervisors: Prof. S. Weiland and Prof. H.J. Zwart

Grade: 8.6/10 Cum Laude

BSc. Electrical Engineering
2012 - 2016

Eindhoven University of Technology

Automotive Technology Track

Thesis: Modelling and Control of a Formic Acid Powertrain

Grade: 8.2/10 Cum Laude

Secundary school
2006 - 2012

Cambreur college

VWO, Natuur en Techniek (NT), and Natuur en Gezondheid (NG)

Grade: 8/10 Cum Laude

HONORS AND AWARDS

Nominated for Best Young presenter award
Mar. 2019

Benelux meeting

At the Benelux meeting, all PhD students and researchers working on Systems and Control present their work. This year, approximately 170 presenters applied for the award and I was one of the five nominees.

3rd price - 3E and Royal SMIT Bachelor's award
Mar. 2017

3E - Royal SMIT

Together with Royal SMIT Transformers b.v., foundation 3E awards the best bachelor graduates in the area of electrical energy engineering, smart energy technology or high voltage engineering. All bachelor graduates working in this area in the Netherlands can participate.

TU/e Honors Academy
Sep. 2016

Eindhoven University of Technology

The Honors Academy offers a varied choice of excellence tracks for Bachelor students. The overall goal is to prepare them for personal leadership as well as scientific, societal and/or industrial

leadership. The Honors Academy aims for the top 100 students and takes two years to complete.

ALSP scholarship   Jul. 2016
Amandus H. Lundqvist Scholarship Program
Named in honor of the former TU/e President, this program awards scholarships to excellent students who have achieved the highest grades during their Bachelor program. Every year only 10 students at the TU/e receive this grant.

PUBLICATIONS

van Huijgevoort, B.C., Weiland, S., Haesaert, S., *Temporal logic control of nonlinear stochastic systems using a piecewise-affine abstraction.* IEEE Control Systems Letters, 2022.

van Huijgevoort, B.C., Haesaert S., *Similarity quantification for linear stochastic systems: A coupling compensator approach.* Automatica, 2022.

van Huijgevoort, B.C., Schön, O., Soudjani, S., Haesaert S., *SySCoRe: Synthesis via Stochastic Coupling Relations.* ACM Conference on Hybrid Systems: Computation and Control. (HSCC), 2023.

Schön, O., van Huijgevoort, B.C., Haesaert S., Soudjani, S., *Poster abstract: Data-driven correct-by-design control of parametric stochastic systems.* ACM Conference on Hybrid Systems: Computation and Control. (HSCC), 2023.

Schön, O., van Huijgevoort, B.C., Haesaert S., Soudjani, S., *Correct-by-Design Control of Parametric Stochastic Systems.* IEEE Conference on Decision and Control (CDC), 2022.

van Huijgevoort, B.C., Haesaert, S., *Multi-layered simulation relations for linear stochastic systems,* European Control Conference (ECC), 2021.

Abate, A., Blom, H., Delicaris, J., Haesaert, S., van Huijgevoort, B.C., Lavaei, A., Remke, A., Schön, O., Schupp, S., Shmarov, F., Soudjani, S., Willemsen, L., and Zuliana, P., *"ARCH-COMP23 Category Report: Stochastic Modelling"*, EPiC Series in Computing, 2023.

Abate, A., Blom, H., Delicaris, J., Haesaert, S., Hartmanns, A., van Huijgevoort, B.C., Lavaei, A., Ma, H., Niehage, M., Remke, A., Schön, O., Schupp, S., Soudjani, S., and Willemsen, L., *"ARCH-COMP22 Category Report: Stochastic Modelling"*, Proceedings of 9th International Workshop on Applied Verification of Continuous and Hybrid Systems (ARCH), EPiC Series in Computing, 2022.

Abate, A., Blom, H., Cauchi, N., Degiorgio, K., Fränzle, M., Hahn, E.M., Haesaert, S., Ma, H., Oishi, M., Pilch, C., Remke, A., Salamati, M., Soudjani, S., van Huijgevoort, B.C., and Vinod, A.P., *"ARCH-COMP19 Category Report: Stochastic Modelling"*, 6th International Workshop on Applied Verification of Continuous and Hybrid Systems (ARCH), EPiC Series in Computing, 2019.

Koopaee, M. J., Van Huijgevoort, B.C., Pretty, C., and Chen, X.Q., *Parameters tuning of snake robots sidewinding gait using Bayesian optimization,* 4th International Conference on Control, Automation and Robotics (ICCAR) (pp. 43-49), 2018

Schön, O., van Huijgevoort, B.C., Haesaert S., Soudjani, S., *Verifying the Unknown:Correct-by-Design Control Synthesis for Networks of Stochastic Uncertain Systems.* Accepted for publication at IEEE Conference on Decision and control (CDC), 2023.

Schön, O., van Huijgevoort, B.C., Haesaert S., Soudjani, S., *Bayesian regression for temporal logic control of uncertain systems.* Under review.

van Huijgevoort, B.C., Soudjani, S., Haesaert S., *Specification-guided temporal logic control for linear stochastic systems: a multi-layered approach.* In preparation.

van Huijgevoort, B.C., Verhoek, C., Tóth, R., Haesaert, S., *Direct data-driven signal temporal logic control of linear systems.* In preparation.

PHD COURSES AND TEACHING ACTIVITIES

PROOF courses
Courses that are part of the TU/e PROOF program (PROviding Opportunities For PhD students), which have been developed for all PhD students at the TU/e.
Scientific integrity - Taking charge of your PhD - Supervising MSc-Students - Audience-focused presentation - Writing Articles and Abstracts.

TEACH courses
Courses that are part of the TU/e TEACH training program to help with performing teaching tasks as professionally as possible.
Teaching and learning in higher education.

Mathematics II   2018/2019
Eindhoven University of Technology
Teaching assistant (TA).

Mathematics II   2019/2020
Eindhoven University of Technology
Teaching assistant (TA).

Control Principles for Engineered Systems   2020/2021
Eindhoven University of Technology
Teaching assistant (TA). Set-up (part of) a new course on formal methods.

Control Principles for Engineered Systems   2021/2022
Eindhoven University of Technology
Teaching assistant (TA).

(INTERNATIONAL) EXPERIENCES AND PROJECTS

Internship abroad   Sept. 2017
University of Canterbury, Christchurch New Zealand
For three months, I developed an algorithm for parameter tuning of snake robots using Bayesian optimization at the Mechanical Engineering Department of the University of Canterbury.

Student member of the education committee   2015 - 2018
Eindhoven University of Technology
Assisting the department to improve education.

Chief of Electrical engineering team   2015 - 2016
Eindhoven University of Technology, Team FAST

Developing the control system of a bus driving on Formic Acid and supervising the software and hardware engineers.

Student assistant
2013 - 2014

Eindhoven University of Technology

Advice and support a group of freshmen.

EXTRACURRICULAR ACTIVITIES

Board and several committees
2012 - 2018

Study association of Electrical Engineering; Thor ($\pm$700 members)

Study association Thor - President

Study Tour committee - Secretary

Yearbook committee - External relations

Editorial board of department magazine - Layout editor

SKILLS

Languages	Dutch (mother tongue), English (fluent)
Software	MATLAB, LATEX