

Short CV

NAME	Yahao Chen
CONTACT INFORMATION	Affiliation: Bernoulli Institute, University of Groningen Address: Nijenborgh 4, 9747 AG Groningen, The Netherlands Phone: +33(0) 768334227 Web: https://chenyahao.github.io/ Emails: yahao.chen@rug.nl chenyahao1991@gmail.com
RESEARCH INTERESTS	Linear and nonlinear differential-algebraic equations (DAEs): solution theory, feed-back linearization, canonical forms, structural analysis; Geometric methods for linear and nonlinear control systems; Nonlinear control theory: stability and stabilization, singular perturbation, etc; Non-smooth dynamics: Jumps and impulses of DAEs with inconsistent initial values, switching DAEs.
BACKGROUNDS	University of Groningen, the Netherlands Postdoctoral Researcher (Applied Mathematics, September 2019-Now) <ul style="list-style-type: none">• Project: “<i>Analysis and control of switched differential algebraic equations</i>” (PI: S. Trenn), NWO Vidi grant 639.032.733 Institut National des Sciences Appliquées (INSA) de Rouen, France PhD (Applied Mathematics, October 2015-June 2019) <ul style="list-style-type: none">• Dissertation: “<i>Geometric analysis of differential-algebraic equation control systems: linear, nonlinear and linearizable</i>” Northeastern University (NEU), China MSc (Control Science and Engineering, October 2012-July 2015) <ul style="list-style-type: none">• Dissertation: “<i>Anti-windup Compensator for Control System Subject to Actuator Saturation</i>”
JOURNAL PUBLICATIONS	Y. Chen* and W. Respondek (2021), Geometric analysis of differential-algebraic equations via linear control theory, <i>SIAM Journal on Control and Optimization</i> , 59, pp. 103-130. Y. Chen* and W. Respondek (2020), From Morse triangular form of ODE control systems to feedback canonical form of DAE control systems, second submission to <i>Journal of the Franklin Institute</i> , available from https://arxiv.org/abs/2103.14913 . Y. Chen*, S. Trenn and W. Respondek (2020), Normal forms and internal regularization of nonlinear differential-algebraic control systems., second submission to <i>International Journal of Robust and Nonlinear Control</i> , available from the website of the authors. Y. Chen* and W. Respondek (2021), Geometric analysis of nonlinear differential-algebraic equations via nonlinear control theory, first submission to <i>Journal of Differential Equations</i> , available from https://arxiv.org/abs/2103.16711 . Y. Chen* and W. Respondek (2021), Feedback linearization of nonlinear differential-algebraic control systems, available from https://arxiv.org/abs/2104.02141 .

CONFERENCES PUBLICATIONS	Y. Chen* and S. Trenn (2021), An approximation for nonlinear differential-algebraic equations via singular perturbation theory, IFAC Conference on Analysis and Design of Hybrid Systems, in press.		
	Y. Chen* and S. Trenn (2021), The differentiation index of nonlinear differential-algebraic equations versus the relative degree of nonlinear control systems, PAMM, 20(1), e202000162.		
	Y. Chen* S. Trenn (2021), On geometric and differentiation index of nonlinear differential-algebraic equations, 24th International Symposium on Mathematical Theory of Networks and Systems (MTNS 2020), in press.		
	Y. Chen* and W. Respondek (2019), Yahao Chen, Witold Respondek, Internal and External Linearization of Semi-Explicit Differential Algebraic Equations, IFAC-PapersOnLine, Volume 52, Issue 16, 2019, Pages 292-297.		
	J. Dong, Y. Chen, G.H. Yang (2014), Reliable fuzzy stabilization against sensor faults, 2014 International Conference on Mechatronics and Control (ICMC), pp. 2059-2062. IEEE.		
TEACHING EXPERIENCE	Spring	2021	TA, Project Systems Theory, University of Groningen
	Winter	2020	Lecturer, Advanced Systems Theory, University of Groningen
	Fall	2018	TA, Equations Différentielles, INSA de Rouen
	Fall	2017	TA, Calcul Différentiel, INSA de Rouen
AWARDS	2015-2019	Scholarship from Chinese Scholarship Council (CSC)	
	2012-2014	Highest distinction in general scholarship; First-Class Honours.	
	2013	Third Prize in National Mathematical Contest in Modeling	
	2012-2013	Merit Student	
GRADUATE COURSEWORK	<input type="checkbox"/>	Calculus	<input type="checkbox"/> Differential Geometry
	<input type="checkbox"/>	Linear Control Theory	<input type="checkbox"/> Analog and Digital Electronics
	<input type="checkbox"/>	Linear Algebra	<input type="checkbox"/> Automatic Control Principal
	<input type="checkbox"/>	Ordinary Differential Equations	<input type="checkbox"/> Matrix Analysis
	<input type="checkbox"/>	Partial Differential Equations	<input type="checkbox"/> Intelligent Control Systems
	<input type="checkbox"/>	Nonlinear Control Systems	
SCIENTIFIC PROJECT EXPERIENCE	2013-2015	Control system design for a class of canard rotor/fixed wing aircrafts. (participate)	
		PI: Prof.Jiuxiang Dong, Prof.Guang-Hong Yang	
		Institute of Navigation and Control Theory, NEU, China.	
	2013-2014	Research on the control system of Denso 6-Axis robot.	
RELEVANT SKILLS		Advisor: Prof.Jiuxiang Dong	
		Institute of Navigation and Control Theory, NEU, China.	
	Languages:	English (TOEFL ibt 99), French (TCF B1), Chinese (native).	
	Programing:	C/C++, Python.	
	Others:	L ^A T _E X, Matlab/Simulink, ROS, embedded system design (51 Single-chips, ARM STM32).	

REFERENCES

Prof. Stephan Trenn, Faculty of Science and Engineering Systems, Control and Applied Analysis, Bernoulli Institute, Nijenborgh 99747 AG Groningen, The Netherlands, s.trenn@rug.nl

Prof. Witold Respondek, Normandie Université, INSA-Rouen, LMI, 76801 Saint-Etienne-du-Rouvray, France, (0033)232956632, witold.respondek@insa-rouen.fr

Prof. Jiuxiang Dong, Northeastern University, School of Information Science and Engineering, 110004 Shenyang, China, dongjiuxiang@ise.neu.edu.cn