Curriculum Vitae

Name:
Bart Paul Gerard Van Parys

Sloan Department (Group):
Operations Research & Statistics

Month/Year of Birth: 04/25/1988

Place of Birth: Leuven, Belgium

Citizenship: Belgium
Immigration Status: H1B

I. Education

Degree, Subject	*School*	*Date*
PhD, Electrical Engineering	ETH Zurich	12/2015
MS, Engineering Mathematics	KU Leuven	06/2011
BS, Electrical Engineering	KU Leuven	06/2009

II. Title of Doctoral Thesis and Name of Thesis Advisor

"Distributionally Robust Control and Optimization" supervised by Prof. Manfred Morari

III. Principal Field(s) of Interest

Optimization, Machine Learning, Data Analytics

IV. Name and Rank of other Sloan Faculty in Same Field

Name	*Rank*
Dimitris Bertsimas	Full Professor
Robert M. Freund	Full Professor
Vivek F. Farias	Full Professor
David D. Gamarnik	Full Professor
Georgia Perakis	Full Professor
Rahul Mazumder	Associate Professor (without tenure)

V. Non-MIT Employment

Employer	*Position*	*Start*	*End*
ETH Zurich	Research Assistant	09/2011	12/2015

VI. History of MIT Appointments

Rank	*Start*	*End*
Assistant Professor	06/2018	Present
Lecturer	06/2017	05/2018
Postdoctoral Researcher	01/2016	05/2018

VII. MIT Activities

Committee	*Start*	*End*
Larry Schmidt Reappointment Committee	2020	2020
ORC Doctoral Admissions Committee	2019	Present
MBAn Admissions Committee	2019	Present

VIII. Awards

Date

Junior Faculty Research Assistance Program 2019

Awarded a junior faculty research assistance grant for the proposal "resource efficient analytics via distributional optimization"

ETH Medal for Outstanding PhD dissertation 2017

My dissertation "Distributionally Robust Control and Optimization" received the ETH Medal (for top 8% of dissertations at ETH Zurich)

SNSF Early PostDoc.Mobility Research Fellowship 2015

Awarded a postdoctoral fellowship grant by the Swiss National Science Foundation (SNSF) for the proposal "Data-driven systems analysis and decision making via convex optimization"

Finalist George Nicholson Best Paper Competition 2014

Finalist in the George Nicholson Best Paper Competition for the contribution "Generalized Gauss inequalities via semidefinite programming"

Marie-Curie Fellowship 2013

Marie-Curie fellow in the FP7 initial training network project Energy-Smartops: "Energy savings from smart operation of electrical, process and mechanical equipment".

IX. Professional Membership and Activities

Memberships
Institute for Operations Research and the Management Sciences (INFORMS), Member since 2016

Reviewer for Transactions of Automatic Control, Mathematical Programming, Operations Research and Management Science

X. Subjects Taught

Number	*Title*	*Date*
15.081	*Introduction to Mathematical Programming*	*Fall 2019*
15.093	*Optimization Methods*	*Fall 2018*
15.084	*Nonlinear Optimization*	*Spring 2019* *Spring 2018*

XI. Thesis Supervision

1. Doctoral Thesis Committee Member

Name	*Program*	*Degree*	*Year*
Jean Pauphilet	ORC	PhD	2020

2. Master's Theses Supervised

Name	*Program*	*Degree*	*Year*
Bartolomeo Stellato	Electrical Engineering	MS	2014
Riccardo Moriconi	Electrical Engineering	MS	2014

3. MBAn Final Projects (Capstone)

Name	*Program*	*Company*	*Year*
Julia van Hoogstraten, Leann Thayaparan	MBAn	GM	2019
Remi Lalanne, Jeremy Tran Kiem	MBAn	GM	2019

4. Theses in Progress

Name	*Program*	*Degree*	*Year*
Shuvomoy Das Gupta	*ORC*	*PhD*	*2019*
Takuya Kashimura	*SDM*	*MS*	*2020*

XII. Publications

1. Theses

Van Parys, B.P.G. (2015). “Distributionally Robust Control and Optimization”. PhD thesis. ETH Zurich

Van Parys, B.P.G. (2011). “Fully Homomorphic Encryption”. Translation from Dutch. Master thesis. KU Leuven

2. Refereed Journal Articles

Van Parys, B.P.G., P. Mohajerin Esfahani, and D. Kuhn (2020). “From data to decisions: Distributionally robust optimization is optimal”. In: Management Science. To appear

Bertsimas, D. and B.P.G. Van Parys (2019). “Sparse hierarchical regression with polynomials”. In: Machine Learning. To appear

Bertsimas, D., J. Pauphilet, and B.P.G. Van Parys (2019). “Sparse regression: Scalable algorithms and empirical performance”. In: Statistical Science. To appear

Bertsimas, D. and B.P.G. Van Parys (2018). “Sparse high-dimensional regression: Exact scalable algorithms and phase transitions”. In: Annals of Statistics. To appear

Van Parys, B.P.G., P.J. Goulart, and M. Morari (2019). “Distributionally robust expectation inequalities for structured distributions”. In: Mathematical Programming 173.1-2, pp 251-280

Stellato, B., B.P.G. Van Parys, and P.J Goulart (2017). “Multivariate Chebyshev inequality with estimated mean and variance”. In: The American Statistician 71.2, pp 123-127

Van Parys, B.P.G,, P.J. Goulart, and D. Kuhn (2016). “Generalized Gauss inequalities via semidefinite programming”. In: Mathematical Programming 156.1-2, pp. 271-302

Van Parys, B.P.G., P.J. Goulart, D. Kuhn, and M. Morari (2016). “Distributionally robust control of constrained stochastic systems”. In: IEEE Transactions on Automatic Control 61.2, pp. 430-442

Van Parys, B.P.G., P.J. Goulart, and M. Morari (2013). “Infinite horizon performance bounds for uncertain constrained systems”. In: IEEE Transactions on Automatic Control 58.11, pp. 2803-2817

3. Articles in Refereed Conference Proceedings

Van Parys, B.P.G., B.-F. Ng, P.J. Goulart, and R. Palacios (2014). “Optimal control for load alleviation in wind turbines”. In: 32nd ASME Wind Energy Symposium. National Harbor, Maryland, USA.

Van Parys, B.P.G, P.J. Goulart, and M. Morari (2012). “Performance bounds for min-max uncertain constrained systems”. In: IFAC conference on NMPC. Noorwijkerhout, the Netherlands.

Van Parys, B.P.G., P.J. Goulart, and M. Morari (2012). “Infinite-horizon performance bounds for constrained stochastic systems”. In: IEEE Conference on Decision and Control. Maui, Hawaii, USA.

4. Papers/Articles in Progress or Under Review

Sutter, T., B.P.G. Van Parys, and D. Kuhn (2020). “Optimal decision-making: Beyond IID data”. In progress

Van Parys, B.P.G. and N. Golreaei (2020). “Optimal learning for structured bandits”. In progress

Van Parys, B.P.G. (2020). “Data analytics with bagging prediction models”. In progress

Bertsimas, D. and B.P.G. Van Parys (2018). “Bootstrap robust data analytics”. In: Mathematical Programming. Major revision

Bertsimas, D., J. Pauphilet, and B.P.G. Van Parys (2018). “Sparse classification: a Scalable discrete optimization perspective”. In: Operations Research. Submitted

5. Technical Reports

Van Parys, B.P.G., P.J Goulart, and P. Embrechts (2016). “Frechet inequalities via convex optimization”.

Roald, L., F. Oldewurtel, B.P.G. Van Parys, and G. Anderson (2015). “Security constrained optimal power flow with distributionally robust chance constraints”.

XIII. Invited Oral Presentations

"Robust prescriptive analytics" (02/2020). In: Mathematical Science Colloquium. Rensselaer Polytechnic Institute. Troy, USA

"Optimal learning for structured bandit problems" (01/2020). In: Networks, Matching, and Platforms 2020. Orlando, USA

"Data analytics with b(r)agging prediction models" (10/2019). In: INFORMS Annual Meeting 2017. Seattle, USA

"Data analytics with b(r)agging prediction models" (08/2019). In: International Conference on Continuous Optimization. Berlin, Germany

"Bootstrap robust prescriptive analytics" (11/2018). In: INFORMS Annual Meeting 2017. Phoenix, USA

"Out-of-sample validation and distributional robustness" (10/2018). In: Operations Research Seminar. Massachusetts Institute of Technology. Cambridge, USA

"Modern optimization for sparse learning and robust analytics" (01/2018). In: MILA-GERAD Seminar Series. University of Montreal. Montreal, Canada

"Sparse hierarchical regression with polynomials" (11/2017). In: INFORMS Annual Meeting 2017. Houston, USA

"Exact sparse high-dimensional regression: Scalable algorithms and phase transitions" (11/2016). In: INFORMS Annual Meeting 2016. Nashville, USA

"Frechet problems and convex programming" (10/2016). In: 4th European Conference on Computational Optimization. Leuven, Belgium

"The limits of optimization with data: a Large deviations perspective" (08/2016). In: International Conference on Continuous Optimization 2016. Tokyo, Japan

"Generalized Frechet inequalities" (05/2015). In: Computational Management Science 2015. London, UK

"Generalized Gauss inequalities via semidefinite programming" (03/2015). In: Laboratory for Information Decision Systems. Massachusetts Institute of Technology. Cambridge, USA

"Generalized Gauss inequalities via semidefinite programming" (11/2014). In: INFORMS Annual Meeting 2014. San Fransisco, USA. George Nicholson Best Paper Finalist

"Generalized Gauss inequalities via semidefinite programming" (05/2014). In: Optimization and Applications Seminar. ETH Zurich. Zurich, Switzerland

"Generalized Gauss inequalities via semidefinite programming" (04/2014). In: Center for

Systems and Control. Delft University. Delft, the Netherlands

“Optimal Control for Load Alleviation in Wind Turbines” (01/2014). In: 32nd ASME Wind Energy Symposium. National Harbor, Maryland, USA

“Distributionally robust control of constrained stochastic systems” (06/2013). In: International Conference on Continuous Optimization 2013. Lisbon, Portugal

“Performance bounds for min-max uncertain constrained systems” (08/2012). In: IFAC Conference on NMPC. Noordwijkerhout, the Netherlands

“Performance bounds in robust & stochastic optimal control problems” (04/2012). In: Computational Management Science 2012. London, UK

“Differential games : a Nonlinear model predictive control (NMPC) perspective” (04/2011). In: Automatic Control Seminar Series. ETH Zurich. Zurich, Switzerland.