Luca Fenzi
Curriculum vitae

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Personal Information

Work Address	Celestijnenlaan 200a - box 2402 3001 Leuven (BE)	Nationality	Italian
Date of birth	Verona (IT), February 24 1991	Gender	Male

Curriculum studiorum

2015 - Present **Phd Program in Engineering Science**, *KU Leuven*, Leuven (Belgium), Department of Computer Science
Numerical Analysis and Applied Mathematics Section.
Title: Computational methods for robust control of large-scale interconnected systems,
Supervisor: Prof. Wim Michiels.

2015 **Master's Degree in Mathematics**, *Università degli Studi di Udine*, Udine (Italy), Grade 110/110 with honors.

2015 **Diploma of Scuola Superiore**, *Università degli Studi di Udine*, Udine (Italy), Official diploma - Grade 110/110 with honors.
5-year board and lodging merit bursary for excellence, involving:
- an entrance examination for 10 places in all the scientific subjects, with a further failing rate of 50% of the students in the following five years
- dedicated courses and additional two exams every year, consisting of the dissertation of a research essay after delivering a speech

For further information www.scuolasuperiore.uniud.it

2015 **Erasmus exchange program**, *Norwegian University of Science and Technology (NTNU)*, Trondheim (Norway).

2013 **Bachelor's Degree in Mathematics**, *Università degli Studi di Udine*, Udine (Italy), Grade 110/110 with honors.

2010 **High school diploma**, *Scientific Lyceum "Galileo Galilei"*, Verona (Italy), Grade 93/100.
Specialization in Mathematics and Computer Science

Work experience

2015 - Present **Graduate research assistant**, *KU Leuven*, Leuven (Belgium), Further information are given in section Curriculum studiorum.

2010-2015 **Raft guide**, *Verona Rafting, Adige Rafting and Alpin Action FVG*, Verona and Resiutta (Italy).

2010 **Slalom Kayak Trainer**, *Canoa Club Verona*, Verona (Italy).

2008–2009 **Waiter**, *Pizzeria n5*, Verona (Italy).

2007 **Technical worker**, *Digital Network*, Verona (Italy).
Digital Network rents, sells and installs technical equipments for events, conventions and exhibitions. For further information www.digitalnetwork.it.

Publications

2018 L. Fenzi and W. Michiels. Polynomial (chaos) approximation of maximum eigenvalue functions: efficiency and limitations. *arXiv*, 1804.03881, 2018.

2018 L. Fenzi and W. Michiels. Experiments on polynomial (chaos) approximation of maximum eigenvalue functions: Tutorial. Technical report, TW 688, Department of Computer Science, KU Leuven, 2018.

2017 L. Fenzi, D. Pilbauer, W. Michiels, and T. Vyhlídal. A probabilistic approach towards robust stability optimization, with application to vibration control. In F. Stépán and G. Csernák, editors, *Proceedings of the 9th European Nonlinear Dynamics Conference*, 2017.

2017 L. Fenzi and W. Michiels. Robust stability optimization for linear delay systems in a probabilistic framework. *Linear Algebra and its Applications*, 526:1–26, aug 2017.

Conferences

2018 **Talk: Polynomial (chaos) approximation of the spectral abscissa: efficiency and limitations**, *Time Delay Systems (TDS) 2018*, Budapest (Hungary).

2017 **Talk: A probabilistic approach towards robust stability optimization, with application to vibration control**, *European Nonlinear Dynamics Conference (ENOC) 2017*, Budapest (Hungary).

2017 **Talk: A probabilistic approach towards robust stability optimization, with applications**, *Workshop on Computational aspects of Time Delay System theory with Applications at CTU*, Prague (Czechia).

2017 **Talk: A probabilistic approach towards robust stability optimization, with applications**, *NUMA seminar at KU Leuven*, Leuven (Belgium).

2016 **Talk: Robust stability optimization for delay differential algebraic equations in a probabilistic framework**, *European Conference on Computational Optimization (EUCCO)*, Leuven (Belgium).

2016 **Attendance.**, *Dynamical Systems, Control and Optimization (DYSCO) Study Day*, Louvain-la-Neuve (Belgium).

2016 **Attendance.**, *System Structure and Control (SSSC) 2016 & Time Delay Systems (TDS) 2016*, Istanbul (Turkey).

2016 **Technical Assistant.**, *International Linear Algebra Society (ILAS) Conference 2016*, Leuven (Belgium).

2015 **Talk: Pedestrian Flows, Un nuovo modello**, *Rete di Idee*, Scuola Normale di Pisa and Sant'Anna, scuola universitaria superiore (Italy).

2012	**Talk: Esistenza del Trascendente, Dimostrazioni dell'esistenza di numeri e serie formali trascendenti**, *Rete di Idee*, ISUFI Lecce (Italy).

Teaching Experience

2017-present	**Teaching Assistant of the Master Course Numerical Linear Algebra**, *Ku Leuven*, Leuven (Belgium).
2016	**Teaching Assistant of the Master Course Optimization**, *Ku Leuven*, Leuven (Belgium).
2013	**Training lesson in preparation of the "National Olympics of Mathematics"**, *Mathesis*, Udine (Italy).

Computer skill

Matlab	Advanced knowledge	*Gained during my PhD and advanced courses in Linear Algebra control theory and MathWorks workshop.*
R	Advanced knowledge	*Gained during advanced courses in Statistics.*
LaTeX	Advanced knowledge	*Gained during my PhD and exploit in several projects.*
HTML	Advanced knowledge	*Gained during the PhD program for doing my personal website and for the website of the UCoCoS project ucocos.be.*
C	Good knowledge	*Gained during the course of "Computer Science 1".*
Photoshop	Good knowledge	*Gained as an amateur photographer and with a course on Image Editing.*
Office Package	Good knowledge	*Gained from several projects.*
Mathematica	Basic knowledge	*Gained during the course of "Laboratory of Computational Mathematics".*
Geogebra	Basic knowledge	*Gained during the course of "Laboratory of Computational Mathematics".*

Languages

Italian	Native speaker	*Mother tongue*
English	Excellent command	*Level C1 (CEF), Certified by Scuola Superiore improved by a Pronunciation course at ILT KU Leuven.*
Norwegian	Basic communication skills	*Level A1 (CEF), Certified by Norwegian University of Science and Technology.*
Dutch	Basic communication skills	*Level A2 (CEF), Certified by Leuven Language Institute.*

Posts of responsibility

2017- present	**Contributor in the Society of Industrial and Applied Mathematics (SIAM) student chapter**, *KU Leuven*, Leuven (Belgium). For further information http://siam.cs.kuleuven.be/

2015	**Reference group member of the courses "Computer intensive statistical methods" and "Numerical solution of differential equations by difference methods"**, *Norwegian University of Science and Technology (NTNU)*, Trondheim (Norway).
2013-2014	**Elected member in the Scuola Superiore Board**, *Università degli Studi di Udine*, Udine (Italy).
2013-2014	**Elected member of Scuola Superiore in the Italian Network of Excellent Universitary Students Board**, *Italian Network of Excellent Universitary Students Board*.
2011-2014	**Elected member in the Department of Mathematics and Computer science Board**, *Università degli Studi di Udine*, Udine (Italy), Elected for two terms.
2011-2014	**Member of the University Student Board**, *Università degli Studi di Udine*, Udine (Italy), In office for two terms.
2011-2012	**Elected member in the Academic Senate**, *Università degli Studi di Udine*, Udine (Italy).

Awards and achievement

2016	**Giulio Chiesi memorial prize for the best master's thesis with engineering applications**, *Awarded by Università degli Studi di Udine*, Udine (Italy).
2016	**Prize for the best graduate student in Mathematics**, *Awarded by Università degli Studi di Udine*, Udine (Italy). For further information www.uniud.it/merito.
2013	**Winner of a master scholarship in Engineering Mathematics**, *National Institute of Nuclear Physics (INFN), Gran Sasso Science Institue (GSSI) and University of L'Aquila (Univaq)* , L'Aquila (Italy). For further information www.gssi.inf.it. Proscribed in favor of Scuola Superiore scholarship.
2013	**Winner of the announcement for the study trip to CERN**, *ATLAS Udine Group*, Geneva (Switzerland). For further information www.atlas.uniud.it
2011	**Winner of the announcement of the Italian foreign minister for a English course in Malta**, *Embassy of Malta in Rome*, Valletta (Malta).
2010	**Participation at the "National Olympics of Mathematics" - Individual final**, *Project Olympics of Mathematics*, Cesenatico (Italy).
2009-2010	**Participation at the "National Olympics of Mathematics" - Team Competition**, *Project Olympics of Mathematics*, Cesenatico (Italy).

Sports

Canoe	Competitive level and Trainer	*River slalom and white water, specialty K1, C1 e C2*
Alpinism	Amateur	*Rock and Ice*
Unicycle	Amateur	*Specialty MUNI (Mountain UNYcycle)*

Attachments

1 Doctoral Training
2 Master's thesis
3 Bachelor's thesis
4 Compositions and projects for Scuola Superiore
5 Master's degree transcript
6 Scuola Superiore's diploma transcript
7 Bachelor's degree transcript

1st Attachment: Doctoral Training

Professional training courses

Uncertainty Quantification Summer school	WIASS/GAMM/TUM grad course
Sequential Monte Carlo Methods	SOCN grad course
Robust Statistics	KU Leuven master course
Orthogonal Polynomials & Random Matrices	KU Leuven master course

Generic Skills courses

Seminar on Scientific Integrity	KU Leuven
Teacher Assistant training	KU Leuven
Image Editing	Somersault and KU Leuven
Pronunciation and Intonation	ILT and KU Leuven
Seminar on Scientific Integrity	KU Leuven
Image Editing	Somersault and KU Leuven
Effective Graphical Displays	Principiae
Seminar: Getting the message across	Principiae and KU Leuven
Photography courses Beginner-intermediate-advanced	Photography Club KU Leuven

2nd Attachment: Master's thesis

Title	**Polynomial Chaos Theory: _Application to the stability of Uncertain Delay Differential Equations_**
Supervisor	Prof. Rossana Vermiglio
Year	2015
Grade	110/110 with honor
Language	English
Pages	140
Nature	Research work
Keywords	Polynomial Chaos Theory; Uncertain Delay Differential Equations; Stability; Non-intrusive methods; Sparse and tensor grids.

3rd Attachment: Bachelor's thesis

Title	**Relativistic Thermodynamics**
Supervisor	Prof. Sebastiano Sonego
Year	2013
Grade	110/110 with honor
Language	English
Pages	80
Nature	Research work
Keywords	Thermodynamics; Special theory of Relativity; Distributions; Temperature and Lorentz transformations.

4th Attachment: Compositions and projects for Scuola Superiore

Title	**Pedestrian Flow: *Controlled Random Walk Model***
Supervisors	**Prof. Cristian Marchioli** and **Prof. Francesco Zonta**
Grade (Date)	30/30 with honor (2014)
Keywords	Pedestrian flow; Random walk; Particle flow; Simulation; Dynamic programming.

Title	**Pseudo Random Number Generator**
Supervisor	**Prof. Dimitri Breda**
Grade (Date)	30/30 with honor (2014)
Keywords	Pseudo Random Number Generators; Alghorithms; Congruence; Primitive root.

Title	**Boltzmann's Equation**
Supervisor	**Prof. Sebastiano Sonego**
Grade (Date)	Approved (2014)
Keywords	Boltzmann equation; H-theorem; non-relativistic and relativistic elastic collision.

Title	**Nonstandard Analysis**
Supervisor	**Prof. Stefano Ansoldi**
Grade (Date)	30/30 with honor (2013)
Keywords	Nonstandard Analysis; Mathematics education; hyper-real field; topology.

Title	**Exorcisms of a Demon**
Supervisor	**Prof. Sebastiano Sonego**
Grade (Date)	30/30 (2012)
Keywords	Maxwell's demon; Second law of thermodynamics; Quantum mechanics; Entropy and Information.

Title	**Existence of transcendental numbers and formal power series**
Supervisor	**Prof. Pietro Corvaja**
Grade (Date)	28/30 (2011)
Keywords	Transcendental numbers; formal power series; Liouville's, Cantor's, and Lindemann-Weierstrass' theorems.

5th Attachment: Master's degree transcript

Weighted average 29,714/30 on 120 ECTS

Statistics 1	30/30 with honor
Statistics 2	30/30 with honor
Probability 2	30/30
Numerical Analysis 2	28/30
Numerical Analysis 4	30/30 with honor
Laboratory of Computational Mathematics	30/30 with honor
Advanced Algorithms	30/30
Differential Equations	30/30
Institution of Superior Calculus	29/30
Institution of Superior Geometry	30/30
Laboratory of Mathematics	Approved
Numerical solution of differential equations by difference methods	A (30/30 with honor)
Computer Intensive Statistical Methods	A (30/30 with honor)
Stochastic Population Models	A (30/30 with honor)
Thesis	Approved

6th Attachment: Scuola Superiore's diploma transcript

Disciplinary courses

Introduction to Number Theory and Applications to Computer Science
Transport Phenomena in Biological Systems
Introduction to Bifurcation Theory
Probability in Physics
Theoretical Physics
Game Theory
Numerical Methods for Transport Equations
Computational Analytic Geometry
Stochastic Methods in Physics

Interdisciplinary courses

Introduction to Philological Method
Philosophy of Religion - The Experience of the Divine
History of Science
Introduction to DNA structure
Physics and Philosophy

7th Attachment: Bachelor's degree transcript

Weighted average 28,593/30 on 180 ECTS

Physics 1	30/30 with honor
Physics 2	30/30 with honor
Physics 3	30/30 with honor
Modern Physics	30/30
Particles and Fundamental Interactions	30/30 with honor
Rational Mechanics	25/30
Calculus 1	30/30 with honor
Calculus 2	30/30
Differential Equations	30/30
Computer Science 1	30/30
Computer Science 2	30/30
Numerical analysis 1	30/30
Optimization 1	30/30
Arithmetic	30/30
Algebra 1	30/30
Galois'Theory	24/30
Probability 1	28/30
Logical Mathematics	28/30
Geometry 1	27/30
Geometry 2	25/30
Efficient Communication	Approved
Knowledge about business	Approved
English Language	Approved
Computer tools for Mathematics	Approved
Thesis	Approved