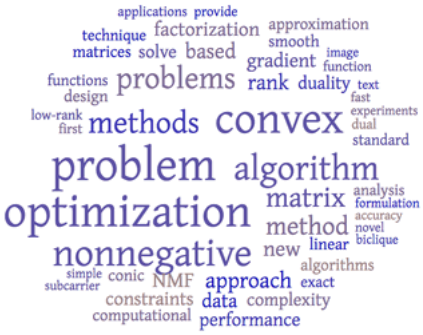
François GLINEUR
UCLouvain / ICTM / INMA
Avenue Georges Lemaître, 4 bte L4.05.01
B-1348 Louvain-la-Neuve, Belgium

☎ +32 (0)10 47 81 64
Francois.Glineur@uclouvain.be
http://perso.uclouvain.be/francois.glineur/

Google scholar https://scholar.google.be/citations?user=p-mHx4AAAAAJ ; ORCID https://orcid.org/0000-0002-5890-1093

Born on 2/10/1974. Belgian citizen, married, two children.



PROFESSIONAL APPOINTMENTS

2020–	Full professor at *École Polytechnique de Louvain (EPL), Université catholique de Louvain (UCLouvain).* Member of the ICTEAM Institute (applied mathematics division) and affiliated to LIDAM Institute, *Center for Operations Research and Econometrics*
2011–2020	Professor at *École Polytechnique de Louvain, Université catholique de Louvain*
2002–2011	Assistant professor at *École Polytechnique de Louvain*, *Université catholique de Louvain* (tenured since October 2005)
2001–2002	Post-doctoral researcher at *Fonds National de la Recherche Scientifique*, attached to *Mathematics and Operations Research* department at *Faculté Polytechnique de Mons* (now *Université de Mons*) ; post-doctoral stay in the lab of prof. Tamás TERLAKY at *McMaster University, Hamilton* (Canada)

EDUCATION

1997–2001	Research Fellow at the *Fonds National de la Recherche Scientifique, Faculté Polytechnique de Mons* (now *Université de Mons*). *PhD in applied sciences* under the supervision of profs. Jacques TEGHEM and Tamás TERLAKY.
1992–1997	*Computer Science and Management Engineering degree* at *Université de Mons* & *Engineering degree* at *Ecole Supérieure d'Electricité* (Paris) (T.I.M.E. dual degree)

SUMMARY OF TEACHING ACTIVITIES

- Teaching at all stages of the EPL engineering/computer science programs, on the topics of calculus and optimization models and methods (introductory bachelor: LEPL1102, LEPL1105, LINFO1111, major/minor bachelor: LINMA702, master: LINMA2471, LINMA2120)
- Involvement in doctoral courses at UCLouvain (SOCN) and outside of UCLouvain
- Supervision of 65 master theses in mathematical engineering

SUMMARY OF RESEARCH ACTIVITIES

- Main research topic: algorithms in mathematical optimization, applications in engineering; second area of expertise in numerical linear algebra and data science: nonnegative matrix factorization; more than 75 peer-reviewed publications (3379 citations, h-index 29)
- Supervision of 16 doctoral theses (including 6 ongoing)
- Research contracts: 10 FNRS/FRIA grants, one H2020 ITN network (2019, 3.8 M€, sole UCLouvain PI), one FNRS-FWO EOS (2018-2021, 3.1 M€), one ARC (2014, 500 k€) as leader, several federal IAPs as member, GlobalPartnership KULeuven, several FSRs; with industry: two FIRST (2008/11) and one Doctiris (2012) grants, a BioWin (WR) project (2017, 977 k€)
- Awarded 2017 Optimization Letters Best Paper Award and, as supervisor, the 2018 IBM Innovation award, A.W. Tucker prize finalist 2015-2017, 2014 Householder award, three ICTEAM thesis awards (2012, 2014, 2018) and two ORBEL awards (2013 and 2008)

SUMMARY OF SERVICE ACTIVITIES

- Academic responsibility for *Dédra-MATH-isons* in 2023 (high school mathematics event)
- Vice-dean of the *École Polytechnique de Louvain* (June 2016-October 2020)
- Program director for the mathematical engineering degrees (2006-2012), vice-head of the mathematical engineering division (2012-2015 and 2017)
- Responsible for bachelor schedule within the major-minor elective system (2010-2021)
- Calculus examiner for the EPL entrance exam (2007-2011)
- Organization of workshops and conferences, including ORBEL19 and ORBEL30 in Louvain-la-Neuve (January 2005 and 2016, 125 participants), the Convex and Nonsmooth optimization cluster at ICCOPT (July 2013), BFG'09 in Leuven (September 2009, 250 participants), TraDE-OPT Workshop on Algorithmic and Continuous Optimization (July 2022) and PEP talks workshop (February 2023)
- Member of the board of the IEEE Signal Processing Benelux chapter (2013-2016), of the board of the ORBEL society, jury in a FRIA commission (2015-2018)
- Organizer of local scientific activities, incl. the Operations Research (CORE) and Mathematical Engineering (INMA) research seminars, doctoral courses, reading groups, FRIA coaching
- Consulting activity in applied mathematics for several companies

List of publications

(see complete list of publications in separate file)

Scientific supervision

PhD students

1. Robert CHARES, *Cones and Interior-Point Algorithms for Structured Convex Optimization involving Powers and Exponentials* (2005-2009)
2. Nicolas GILLIS, *Nonnegative Matrix Factorization, Complexity, Algorithms, Applications* (2007-2011)
3. Jonathan DENIES, *Development and implementation of topology optimization methods for the design of electromagnetic devices with multi-physics coupling* (with B. Dehez and H. Ben Ahmed, ENS Cachan, 2008-2013)
4. Olivier DEVOLDER, *Exactness, Inexactness and Stochasticity in First-order Methods for Large-scale Convex Optimization* (with Y. Nesterov, 2009-2013)
5. Arnaud LATIERS, *Autonomous Frequency Containment Reserves from Energy Constrained Loads: A system perspective* (with E. De Jaeger, 2012-2016)
6. Adrien TAYLOR, *Convex Interpolation and Performance Estimation of First-order Methods for Convex Optimization* (with J. Hendrickx, 2012-2017)
7. Benoît MARTIN, *Autonomous microgrids for rural electrification: joint investment planning of power generation and distribution through convex optimization* (with E. De Jaeger, 2013-2018)
8. Julien DEWEZ, *Computational Approaches for Lower Bounds on the Nonnegative Rank* (2013-2022)
9. Valentin HAMAIDE, *Data-driven learning and optimization approaches for proton therapy* (with B. Macq, 2018-2022)
10. Cécile HAUTECOEUR, Nonnegative Matrix Factorization using Parametrizable Functions (2018-2022)

Ongoing:

11. Guillaume VAN DESSEL, *Convex optimization using tunable first-order inexact oracles* (2019-)

12. Yassine KAMRI, *Performance estimation and design of optimal optimization methods in data science* (with J. Hendrickx, 2021-)
13. Teodor ROTARU, *Computing the exact performance of black-box optimization methods: an automated tool to improve understanding and design better algorithms* (with P. Patrinos, KU Leuven, 2021-)
14. Philémon BEGHIN, *Using photogrammetry for the objective study of ancient bowed instruments: a machine learning approach* (with A.-E. Ceulemans, 2021-)
15. Nizar BOUSSELMI, *Efficient optimization of functions with compositional structure: a performance estimation approach* (with J. Hendrickx, 2021-)
16. Sofiane TANJI, *Automated method selection and tuning for optimization problems in data science* (2021-)

Postdoctoral researchers

- Moslem ZAMANI (2023, SeLMA EOS project), worked on *Performance Estimation of Optimization Methods*
- Yu GUAN (2018-2020, SeLMA EOS project, with P.-A. Absil), worked on *Graph regularized tensor completion*
- Sebastian STICH (2014-2016, ARC Big Data and SNF grants, with Y. Nesterov), worked on *Large-scale optimization*
- Augustin LEFÈVRE (2012-2013, IAP Dysco, with P.-A. Absil), worked on *Informed source separation*
- Nicolas GILLIS (2012-2013, FNRS grant), worked on Constrained low-rank matrix and tensor approximations: complexity, algorithms, and applications.
- Paschalis TSIAFLAKIS (2011, Francqui intercommunity grant), worked on Optimization in Wireless MIMO Relay Networks

Master theses

- 65 master theses supervised, mainly by students from the master in mathematical engineering at UCLouvain (see https://perso.uclouvain.be/francois.glineur/ for list)

Research internships

- Pierrick GUICHARD (3 months in 2019, ENSTA Paris), *Approche moyennée de l'efficacité de l'algorithme du gradient*.
- Théo GOLVET (3 months in 2017, ENSTA ParisTech), *Etude de performance de méthodes d'optimisation du premier order à oracle inexact*.
- Pasquale ESPOSITO (5 months in 2015, Universitá della Calabria), *A numerical approach for solving the problem of the body of least resistance*.

(Recent) Invitations to conferences and seminars (excerpt)

1. Invited speaker (two keynote talks) at the *48th conference on the Mathematics of Operations Research*, Dutch Network on the Mathematics of Operations Research (LNMB), Soesterberg (The Netherlands), An introduction to performance estimation of first-order methods and Performance estimation of first-order methods: extensions and recent results, January 2023
2. Invited speaker at the seminar of the *Information and Science Engineering Lab*, KTH (Stockholm), Performance estimation of first-order methods, August 2019
3. Invited speaker at the research seminar of *University of Coimbra*, Performance estimation of first-order methods, October 2018
4. Invited speaker at the *Optimization for Learning workshop 2018* (Pontificia Universidad Católica de Chile, Santiago), Performance estimation of first-order methods, January 2018

5. Invited to give a seminar at *INRIA Grenoble*, Performance estimation of first-order methods, November 2017
6. Invited speaker at the *University of Trier colloquium,* Performance estimation of first-order methods, May 2017
7. Invited speaker at the Phi-Tab workshop, Telecom ParisTech (Paris), Performance estimation of first-order methods for composite convex optimization, September 2016
8. Invited to speak at the *CentER Operations Research seminar* (Tilburg university), Performance estimation of first-order methods for (composite) convex optimization, January 2016
9. Invited speaker at the *Optimization and Big Data workshop 2015*, Smooth Strongly Convex Interpolation and Exact Worst-case Performance of First-order Methods, University of Edinburgh, May 2015
10. *ERGO Seminar* (University of Edinburgh), Computing lower and upper bounds on the extension complexity of polytopes, May 2015
11. Speaker at Dagstuhl seminar 15082 (by invitation) Limitations of Convex Programming: Lower Bounds on Extended Formulations and Factorization Ranks, Wadern, Germany, February 15-20 2015, *A geometric lower bound for the nonnegative rank*
12. Speaker at the Fifth Cargese Workshop In Combinatorial Optimization (by invitation), IESC, France, September 12 2014, *Computing upper and lower bounds on the nonnegative rank*
13. *MIT-LIDS seminar*, June 3rd 2013, Second-order cone representations of positive semidefinite cones
14. Invited speaker at one-day conference on Selected Topics in Optimization at University of Mons, April 15 2013, *Towards an optimal method for convex optimization using an inexact first-order oracle*
15. Invited speaker at 4th SDP days, workshop at CWI Amsterdam, March 21-22 2013, *Second-order cone representations of positive semidefinite cones*
16. Speaker at Dagstuhl seminar 13082 (by invitation) Communication Complexity, Linear Optimization, and lower bounds for the nonnegative rank of matrices, Wadern, Germany, February 17-22 2013, *A geometric lower bound for the nonnegative rank*
17. *MIT-LIDS seminar*, November 28th 2012, Towards an optimal method for convex optimization using an inexact first-order oracle
18. Invited speaker at HPOPT2012, 12th International Workshop on High Performance Optimization: Algorithmic convexity and applications, Delft (The Netherlands), June 20-22 2012

Awards and recognition

1. (as supervisor) *2018 ICTEAM thesis award* for Adrien TAYLOR's PhD thesis (best PhD thesis defended within the ICTEAM institute)
2. (as supervisor) *IBM Innovation Award 2018* for Adrien TAYLOR's PhD thesis (outstanding PhD thesis that presents an original contribution to informatics or its applications)
3. 2017 *Optimization Letters* (OPTL) best paper award (with Adrien Taylor and Etienne de Klerk)
4. (as supervisor) *Mathematical Optimization society's Tucker prize finalist* for Adrien TAYLOR's PhD thesis (among top three PhD theses in mathematical optimization defended worldwide during 2015-2017 period)
5. (as supervisor) *2016 Robert Sinave award* for Arnaud LATIERS's PhD thesis (by Belgian Electricity society SRBE to the best PhD thesis in 2014-2016)
6. (as supervisor) *2014 Alston S. Householder award* for Nicolas GILLIS's PhD thesis (best PhD dissertation in numerical linear algebra in 2011-2013)
7. (as supervisor) *2014 ICTEAM thesis award* for Olivier DEVOLDER's PhD thesis (best PhD thesis defended within the ICTEAM institute)

8. (as supervisor) *2013 ORBEL award* for Sophie MARQUAND and Cyrille LEFÈVRE (awarded by Belgian Operations Research society to the best master thesis)
9. (as supervisor) *2012 ICTEAM thesis award* for Nicolas GILLIS (best PhD thesis defended within the ICTEAM institute)
10. (as supervisor) First prize in *S.C.M.-FFJM mathematical modelling contest* La conception d'un réseau de bus (2009) awarded to a team of students (INMA1375 course)
11. (as supervisor) *2008 ORBEL award* for Nicolas GILLIS's PhD thesis (awarded by Belgian Operations Research society to best master thesis in Belgium)
12. *Richard Stiévenart award* for the best master thesis defense, *Université de Mons* (June 1997)

Research grants, contracts and conventions, research networks (excerpt)

1. (as supervisor) *Aspirant F.R.I.A. (doctoral researcher)* funding the PhD of Nizar BOUSSELMI (October 2021-September 2025)
2. Global Partnership KU Leuven-UCLouvain (2021-2025, 48 PhD months, with P. PATRINOS) on *Computing the exact performance of black-box optimization methods*
3. Marie Skłodowska-Curie Innovative Training Network (H2020-MSCA-ITN-2019) *Training Data Driven Experts in Optimization* (TraDE-Opt) (consortium with 8 participants et 6 partners, sole PI at UCLouvain, 3.8M€, 2020-2023)
4. FSR UCL grant on the topic *Characterization of violins : a digital tool at the service of organology*, funding a PhD candidate (with P. FISETTE and A.-E. CEULEMANS, 15 months, 2019, declined)
5. EOS (Excellence of Science) grant awarded by F.R.S.-FNRS on the topic *Structured Low-Rank Matrix/Tensor Approximation Numerical Optimization-Based Algorithms and Applications*, 2018-2021, 3.1M€ (with P.A. ABSIL, L. DE LATHAUWER, B. DE MOOR, N. GILLIS, M. ISHTEVA, I. MARKOVSKY, P. PATRINOS, M. VAN BAREL)
6. FSR UCL grant funding a PhD candidate on *nonnegative matrix factorization with signals* (12 months, 2018)
7. BioWin (Région Wallonne) grant on the topic *Application of « Big data » digital technologies in the healthcare sector*, with IBA company, 2017-2021, 977 k€ (with B. MACQ and R. JUNGERS)
8. ARC (Action de Recherche Concertée) grant on the topic *Mining and Optimization of Big Data Models - Developing and Applying Efficient Algorithms for Very Large-Scale Structured Models, 2014-2019*, 500 k€ (as "porte-parole" promotor, with P.A. ABSIL, V. BLONDEL, J.-C. DELVENNE, R. LAMBIOTTE, Y. NESTEROV)
9. WBI grant supporting travel and collaboration with Romanian Academy of Sciences (with Ion NECOARA) on the topic *Efficient Optimization Algorithms for Big Data Network Systems*, 2016-2018)
10. (as supervisor) *Chargé de Recherches F.N.R.S.* grant (*postdoctoral researcher)* for Nicolas GILLIS (October 2012-September 2015, resigned October 2013)
11. (as supervisor) DOCTIRIS grant from Région de Bruxelles-Capitale to fund doctoral student Arnaud LATIERS (February 2012-September 2016, co-promotor Emmanuel De Jaeger), with industrial partner ELIA
12. Member of the Marie Curie Initial Training Network on Mixed Integer Nonlinear Optimization (MINO, n. 316647), 2012-2016
13. WBI grant supporting travel and collaboration with Romanian Academy of Sciences (with Ion NECOARA) on the topic Huge-scale sparse optimization: theory, algorithms and applications, 2014-2015)

14. MIT-Belgium - Université catholique de Louvain Seed Fund to fund collaboration with Prof. Parrilo (MIT) on the topic Nonnegative, Positive Semidefinite and Cone Ranks: Algebraic, Geometric, and Complexity Aspects (2011-2013)
15. (as supervisor) *Chargé de Recherches F.N.R.S.* grant (*postdoctoral researcher)* for Paschalis TSIAFLAKIS (co-promotor Luc VANDENDORPE, October 2011-September 2014, declined)
16. (as supervisor) *Francqui Intercommunity scientific collaborator grant* (*postdoctoral researcher)* for Paschalis TSIAFLAKIS (January-July 2011)
17. FIRST-Entreprise (Région wallonne) project on the topic « Modelling and solving optimization problems in energy utility systems » with BELSIM s.a. (funding for researcher Damien GÉRARD, September 2011-August 2012)
18. Consulting contracts with OPTIMOR HRM CONSULTANTS company (August 2007, July 2010 and October 2010)
19. (as supervisor) *Aspirant F.N.R.S.* grant *(doctoral researcher)* funding the PhD of Olivier DEVOLDER (October 2009-September 2013)
20. *Tournesol* grant (Hubert Curien partnership, C.G.R.I.), on the topic Optimization over positive polynomials: numerical aspects (2009-2010, with P. VAN DOOREN) ; French partner LAAS (Laboratoire d'Architecture and d'Analyse des Systèmes, Toulouse, with D. HENRION and J. LASSERRE)
21. FIRST-Entreprise (Région wallonne) project on the topic « Robopt – Robust optimization » with SAMTECH s.a. (two-year funding for postdoctoral researcher Samih ZEIN, 2008-2010)
22. (as supervisor) *Aspirant F.R.I.A. (doctoral researcher)* funding the PhD of Jonathan DENIES (October 2008-September 2012, with B. DEHEZ)
23. FSR UCL grant funding the PhD of J. DENIES (with B. Dehez, 15 months, 2008)
24. (as supervisor) *Aspirant F.N.R.S. (doctoral researcher)* funding the PhD of Nicolas GILLIS (October 2007-September 2011)
25. (as supervisor) *Aspirant F.R.I.A. (doctoral researcher)* funding the PhD of Robert CHARES (October 2006-September 2009)
26. Member du Marie Curie Initial Training Network on Algorithmic Discrete Optimization (ADONET, n. 504438), 2004-2007
27. FSR UCL grant funding the PhD of R. CHARES (15 months, 2003, postposed to 2005)

Conference and seminar organization (excerpt)

- Co-organizer (with A. TAYLOR) of the minisymposium on « Principled and computer-assisted approaches for the analysis and design of optimization algorithms » at the 2023 SIAM Conference on Optimization, Seattle (USA), May 31-June 3, 2023 (twelve talks scheduled)
- Member of the organizing team of the PEP talks workshop, February 13-14 2023, at UCLouvain
- Organizer of the TraDE-OPT Workshop on Algorithmic and Continuous Optimization, July 4-8 2022 at UCLouvain
- Co-organizer of the minisymposium on « Performance Estimation of First-Order Methods » at the 2019 International Conference on Continuous Optimization (ICCOPT 2019), Berlin, August 5-8 2019.
- Co-organizer of the IMMAQ/ICTEAM/EPL/SC *Doctorat Honoris Causa in Data Science* ceremony, sponsor of prof. Stephen BOYD, May 18 2017
- Co-organizer (with J. LOUVEAUX) of the 36th WIC Symposium on Information Theory in the Benelux and 5th joint WIC/IEEE SP Symposium on Information Theory and Signal Processing in the Benelux, May 19-20 2016

- Co-organizer (program chair) of the ORBEL30 conference (chair M. QUEYRANNE), 30th Conference on Quantitative Methods for Decision Making, annual meeting of the Belgian Operations Research society, 28-29 January 2016 at UCLouvain (80 speakers, 130 participants)
- Chair (with P. RICHTARIK) of cluster on « Convex and Nonsmooth optimization » (more than 60 talks scheduled) at ICCOPT 2013, Fourth International Conference on Continuous Optimization, Lisbon, July 27-August 1st 2013
- Co-organizer of BFG09 (chair M. DIEHL), 14th Belgian-French-German Conference on Optimization, Leuven, September 14-18 2009 (more than 250 participants)
- Organizer (chair) of the *Optimization and Engineering* workshop (with Y. CRAMA, E. LOUTE and A. SARTENAER), 24 May 2006 at Université catholique de Louvain (40 participants)
- Co-chair of the ORBEL19 conference (with B. FORTZ), 19th Conference on Quantitative Methods for Decision Making, annual meeting of the Belgian Operations Research society, 27- 28 January 2005 at Université catholique de Louvain (70 speakers, 125 participants)

Doctoral courses (invited lecturer, excerpt)

- Performance Estimation of First-Order Methods, Dutch Network on the Mathematics of Operations Research (LNMB), Soesterberg (The Netherlands), January 2023 (more than 200 participants)
- Algorithmic Convex Optimization (with Y. Nesterov), SOCN Graduate School in Systems Optimization Control and Networks, UCL, October 2016 (15 hours, more than 40 participants)
- Convex optimization Why ? What ? How ?, eVITA Winter School on eScience on Optimization, SINTEF, Norway, 11-16 January 2009
- Introduction to continuous optimization, doctoral course within the IAP *Inverse problems and optimization in low frequency electromagnetism*, ULg, March 2008
- Convex Optimization – models and methods, *SOCN Graduate School in Systems Optimization Control and Networks*, UCL, November-December 2006

Participation to doctoral thesis committees

(member of more than 40 jurys, at UCLouvain, in other Belgian universities and abroad, including KU Leuven, UMons, KTH, TU Delft, ENS/INRIA, LAAS, CERFACS, U. Paris-Sud, U. Grenoble, U. of Edinburgh, U. Tilburg)