



# Curriculum Vitae

## Ion Necoară

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### Education

- ▶ November 2014, Habilitation thesis defense, *Coordinate Descent Methods for Sparse Optimization*, University Politehnica Bucharest, (first habilitation thesis in *Systems Engineering* in Romania).
- ▶ November 2002–October 2006, PhD in Applied Mathematics (Control), Delft Center for Systems and Control, Delft University of Technology, Netherlands (grade: *Cum Laude*).
- ▶ 2002–2003 student at Dutch Institute of Systems and Control, Netherlands (grade: *excellent*).
- ▶ 2000–2002 master student in Statistics and Optimization, Faculty of Mathematics, Bucharest University (Master in Applied Mathematics, grade: *9.56/10*).
- ▶ 1996–2000 student at the Faculty of Mathematics, Bucharest University (Diploma in Mathematics, grade: *9.80/10*).

### Academic positions

- ▶ March 2021–present: Senior Researcher I, Institute of Mathematical Statistics and Applied Mathematics of the Romanian Academy.
- ▶ April 2015–present: PhD Advisor in Systems Engineering.
- ▶ February 2015–present: Full Professor of Numerical Methods & Optimization, Automatic Control and Systems Engineering Department (ACSE), Faculty of Automatic Control and Computers Science (ACS), University Politehnica Bucharest (UPB).
- ▶ October 2012 – January 2015: Associate Professor, ACSE, UPB.
- ▶ February 2009 – September 2012: Assistant Professor, ACSE, UPB.
- ▶ April 2007 – March 2009: Associate researcher at the Department of Electrical Engineering, Katholieke Universiteit Leuven, Belgium.
- ▶ November 2006 – February 2007: Associate researcher at the Delft Center for Systems and Control, Delft University of Technology, The Netherlands.
- ▶ Head of *Optimization, Learning and Control group (OLC)* at UPB. OLC is the first in the country to spearhead optimization, learning and control for complex systems.

### Courses

- ▶ Courses at bachelor, master and phd levels: Numerical Methods for Big Data; Optimization Techniques; Big Data Optimization; Optimization for Machine Learning; Distributed Control; Techniques for Diagnosis and Decision.

### Main current fields of interest

- ▶ Optimization theory for convex - distributed - big data - stochastic optimization. Optimization algorithms with a focus on structure exploiting (sparsity, low-rank, stochasticity, error bounds, parallel and distributed computations) and mathematical guarantees about their performance.

- ▶ Model reduction of dynamical systems; stability theory; advanced controller design algorithms for complex systems (e.g., optimal control, model predictive control, distributed control); data-driven modeling and control.
- ▶ Applications include embedded and distributed control; control of robots; optimization for machine learning (SVM, deep neural networks, etc); big data; smart electricity grids; traffic networks; signal processing.

### **Professional Experience**

- ▶ Member of editorial board of the following journals:
  1. EURO Journal on Computational Optimization (Elsevier)
  2. Journal of Machine Learning Research
  3. Mathematics (MDPI)
  4. System Theory, Control and Computing Journal
- ▶ member of the international program committee for several conferences e.g.: European Control Conference; IFAC Conference on Nonlinear Model Predictive Control; International Conference on System Theory, Control and Computing; International Conference Control Systems and Computer Science; IFAC Workshop Control Applications of Optimization; International Conference on Internet of Things and Big Data; International Conference on Artificial Intelligence and Statistics; International Conference on Machine Learning.

### **Reviewer**

- ▶ Optimization journals - Mathematical Programming; SIAM Journal on Optimization; Computational Optimization and Applications; Journal of Optimization Theory and Applications; Optimization Methods and Software; Mathematics of Operations Research; ORIE Journal on Foundations of Computational Mathematics; Mathematical Reviews; Journal Franklin Institute; SIAM Journal Scientific Computing; Journal of Machine Learning Research.
- ▶ Control journals - IEEE Transactions on Automatic Control; Automatica; Systems and Control Letters; SIAM Journal on Control and Optimization; Journal of Process Control; International Journal of Robust Nonlinear Control; Optimal Control, Applications and Methods, Discrete Event Dynamical Systems Theory & Applications.
- ▶ Conferences - Conference on Decision & Control (CDC); American Control Conference (ACC); European Control Conference (ECC); IFAC World Congress (IFAC); International Conference on Machine Learning (ICML), Neural Information Processing Systems (NIPS), etc.
- ▶ Expert evaluator for EC/Romanian/other EU countries R&D Programmes, e.g. ERC (European Commission), NWO (Netherlands), FWO (Belgium), UEFISCDI (Romania).

### **Guest editor**

- ▶ September 2009, organizer of a special issue on *Distributed Control of Large-Scale Networked Systems* in “Journal of Control Engineering and Applied Informatics” (ISI journal).
- ▶ Organizer of sessions at conferences, including CDC, ECC and IFAC World Congress.

### **Plenary/Keynote speaker**

- ▶ February 2020, keynote speaker at “Conference on Games, Dynamics and Optimization”, title talk *Primal-dual methods for solving convex problems with many constraints*, Sapienza U., Rome, 2020.

- ▶ June 2019, speaker at “Congress of Romanian Mathematicians”, title talk *Stochastic first order methods for convex optimization*, Galati, 2019.
- ▶ April 2019, keynote speaker at “International Workshop on Games, Dynamics and Optimization”, title talk *Convergence rates of minibatch stochastic first order methods*, UBB, Cluj, 2019.
- ▶ February 2019, keynote speaker at “International Workshop on Numerical Algorithms in Nonsmooth Optimization”, title talk *Minibatch stochastic first order methods for composite convex optimization*, University of Vienna, Vienna, 2019.
- ▶ October 2018, plenary speaker at “International Conference on Systems Theory, Control and Computing”, title talk *Optimization in Control: Advances and Challenges*, Sinaia, 2018.
- ▶ February 2018, keynote speaker at “International Workshop on Optimization and Big Data”, title talk *Convergence analysis of stochastic first order methods*, KAUST, Thuwal, 2018.
- ▶ June 2017, keynote speaker at “Conference on Recent Advances in Artificial Intelligence”, title talk *On the convergence behavior of stochastic first order methods*, Bucharest, 2017.
- ▶ September 2014, keynote speaker at “International Workshop on Embedded Optimization”, title talk *Dual Gradient Methods with Iteration Complexity Guarantees*, IMT, Lucca, 2014.
- ▶ July 2013, keynote speaker at “HYCON2 Workshop on Distributed Optimization in Large Networks and its Applications”, title talk *Coordinate Descent Methods for Huge-Scale Problems*, ETH Zurich, 2013.

### Research visits

- ▶ August - November 2017, Fulbright visiting professor at Department of Statistics and Operations Research, University of North Carolina at Chapel Hill, USA (collaboration with Prof. Q. Tran-Dinh).
- ▶ March - June 2011, visiting professor at Center for Operations Research and Econometrics, Université Catholique de Louvain, Belgium (collaboration with Prof. Yu. Nesterov & Prof. F. Glineur).
- ▶ August - November 2005, visiting researcher at Control Group, Department of Engineering, University of Cambridge, UK (collaboration with Prof. J. Maciejowski & Prof. E. Kerrigan).
- ▶ Fall 2017, invited researcher (1 or 2 weeks) with talks at several universities in US: University of North Carolina (August 2017), MIT (December 2017), Stevens Institute (August 2017), Cornell University (September 2017), Lehigh University (October 2017).
- ▶ 2005 - present, invited researcher (1 or 2 weeks) with talks at: Linköping University (September 2019), University of Vienna (February 2019), KAUST (February 2018), MIT (December 2017), Lehigh University (October 2017), Cornell University (September 2017), UNC at Chapel Hill (August 2017), EPFL (March 2017, June 2018), University Edinburgh (January 2017, June 2014), University of Magdeburg (November 2014), NTNU (June 2014), IMT Lucca (February 2013, September 2014, July 2015), K.U. Leuven (March 2012, November 2012), SUPELEC (February 2012), Université Catholique de Louvain (May 2011, November 2013, June 2014, November 2014, June 2015, December 2015, June 2016, June 2017, September 2018, May 2019, October 2019), T.U. Delft (February 2011), Lund University (May 2010), ETH Zurich (September 2006, Oct. 2010), Imperial College London (March 2010), University of Cambridge (Aug. 2005), etc.
- ▶ I have worked and published papers with top researchers in the field of control and optimization: Yurii Nesterov (UCL); Angelia Nedich (ASU); Peter Richtarik (KAUST); Quoc Tran-Dinh (UNC); Alberto Bemporad (IMT Lucca); Rolf Findeisen (U. Magdeburg); Moritz Diehl (U. Freiburg); Bart De Schutter (TU Delft); Eric Kerrigan (ICL); Johan Suykens (K.U. Leuven), etc.

### Research projects - project director

I have obtained about 2 millions EUR fundings from international and national research agencies:

- (Pi) January 2021 - December 2024, H2020-MSCA-ITN, *Embedded learning and optimization for the next generation of smart industrial control systems (ELO-X)*, European Commission - H2020, Marie Skłodowska-Curie Actions (MSCA), Innovative Training Network (ITN), Grant Agreement no. 953348, contract value 219.000 EUR (UPB, project director, <https://elo-x.eu>).
- (Pi) June 2020 - May 2024, *Training Data Driven Experts in Optimization (TraDE-OPT)*, European Commission - H2020, Marie Skłodowska-Curie Actions (MSCA), Innovative Training Network (ITN), Grant Agreement no. 861137, contract value 439.000 EUR (UPB, project director, <https://trade-opt-itn.eu/project.html>).
- (Pn) September 2020 - August 2023, NO Grants 2014-2021, *Efficient Learning and Optimization Tools for Hyperspectral Imaging Systems (ELO-Hyp)*, UEFISCDI, Romania, no. 24/2020, contract value for UPB 380.000 EUR (*coordinator of the project*, <https://elohyp.wordpress.com>).
- (Pn) August 2017 - December 2019, *Scale-Free modeling and optimization techniques for control of complex networks (ScaleFreeNet)*, PN-III-P4-ID-PCE-2016, UEFISCDI, Romania, no. 39/2017, contract value 850.000 RON (UPB, project director).
- (Pi) January 2016 - December 2021, *Programme de cooperation scientifique entre L'Academie roumaine, WBI et le FRS/FNRS*, Belgium (UPB, project director) - collaboration with Prof. Nesterov and Prof. Glineur from Universite Catholique de Louvain.
- (Pn) October 2015 - September 2017, *Modeling, Control and Optimization for Big Data Systems (MOCOBiDS)*, PN II - RU - TE 2014, UEFISCDI, Romania, no. 176/01.10.2015, contract value 530.000 RON (UPB, project director).
- (Pi) January 2010 - June 2013, *Embedded Optimization for Resource Constrained Platforms (EMBOCON)*, European Commission, FP7 - ICT (STREP), Grant Agreement no. 248940, contract value 392.000 EUR (UPB, project director).
- (Pn) June 2010 - December 2012, *Embedded Optimization for Resource Constrained Platforms (EMBOCON)*, ANCS, PN II, no. 80EU/17.06.2010, contract value 406.947 RON (UPB, project director).
- (Pn) August 2010 – November 2013, *Mathematical Engineering Tools for Estimation and Control in Networks (METNET)*, PN II - RU - TE 2010, UEFISCDI, Romania, no. 19/11.08.2010, contract value 699.900 RON (UPB, project director).

### Supervision of PhD students

1. Flavia Chorobura, “Scalable optimization algorithms for huge-scale problems”, 2020 -.
2. Yassine Nabou, “Efficient optimization algorithms for complex systems”, 2020 -.
3. Nitesh Kumar Singh, “Efficient stochastic optimization algorithms”, 2020 -.
4. Daniela Lupu, “Higher-order stochastic optimization methods”, 2019 -.
5. Liliana Ghinea, “Advanced control techniques for complex systems”(with Prof. M. Barbu), 2019 -.
6. Andrei Patrascu, “Efficient first order methods for sparse convex optimization”, 2012–2015, defense on October 2015 (assistant professor at University of Bucharest.).
7. Valentin Nedelcu, “Rate analysis of dual gradient methods: application to control” (with Prof. C. Oara), 2010–2013, defense on December 2013 (Renault Romania).

Member in the jury of 8 PhD thesis in Romania and abroad.

## Awards

- ▶ Romanian representative on General Assembly of European Control Association (EUCA) and member of the Nominations Committee since 2020 (EUCA members are recognized leaders in the field of systems and control from across Europe).
- ▶ The National Order *Faithful Service* in Knighthood - from the Romanian President “as a sign of great appreciation for the prodigious academic career, representing the Romanian scientific and cultural excellence, and promoting the image of our country in international scientific circles”, 2017
- ▶ *Fulbright Visiting Professor* at University of North Carolina at Chapel Hill, USA, August - November 2017 (4 months).
- ▶ *Visiting Professor Fellowship* at Center for Operations Research and Econometrics, Universite Catholique de Louvain, Belgium (collaboration with Prof. Yu. Nesterov), March - June 2011 (4 months).
- ▶ *Visiting Researcher Fellowship* at Department of Engineering, University of Cambridge, UK (collaboration with Prof. J. Maciejowski & Prof. E. Kerrigan), August - November 2005 (4 months).
- ▶ *Excellence in Research* award in “Engineering Sciences” - top prize awarded every two years by *Ad Astra*, 2016.
- ▶ *Grigore Moisil* award in “Mathematical Sciences & Information Technology” - top prize awarded yearly by *Romanian Academy*, 2015 (for the papers published in 2013).
- ▶ *Best Paper Award 2016*, for the paper published in *Journal of Global Optimization* in 2015: “A. Patrascu, I. Necoara, Efficient random coordinate descent algorithms for large-scale structured non-convex optimization, 61(1): 19–46, 2015”.
- ▶ *Best Paper Award* at the International Conference on Systems Theory, Control and Computing 2014, for the paper: “I. Necoara, Worst-case computational complexity analysis for embedded MPC based on dual gradient method”
- ▶ The National Authority for Scientific Research Fellowship (Young Independent Research Team Fellowship, 2010-2013 & 2015-2017), Romania.
- ▶ University Fellowship (University Politehnica Bucharest, Excellence in Research Fellowship, 2010-2013), Romania.
- ▶ Postdoctoral Fellowship from K.U. Leuven (FWO, Belgium, 2007-2009).
- ▶ TU Delft awarded *Cum Laude* for my phd thesis “Model Predictive Control for Hybrid Systems: Piecewise Affine and Max-Plus-Linear Systems”, Technical University Delft, The Netherlands, 2006.

## Academic prestige

- ▶ *General chair* of European Control Conference 2023, Bucharest, Romania.
- ▶ Member of *IFAC Committee TC 2.4 Optimal Control*, 2015-2021.
- ▶ Plenary talks at several conferences and workshops: ICSTCC 2018, OBG 2018, EMBOPT 2014, HYCON2 2013, HD-MPC 2008.
- ▶ Member in the IPC of several international conferences.
- ▶ Invited professor to many top universities from abroad.
- ▶ First Habilitation Thesis in Romania in the field of *Systems Engineering*, November 2014.

- ▶ PhD Thesis *Cum Laude* from the Delft Center for Systems and Control, Delft University of Technology, The Netherlands.
- ▶ Author of 130+ papers: 42 articles in ISI journals with high impact factor (Web of Science), 8 book chapters, and 80 articles in prestigious international conferences (e.g., CDC, ACC, ECC, IFAC WC).
- ▶ Author of 87 ISI papers, out of which 42 articles in top ISI journals with cumulative impact factor > 100, for which he received several awards (National Order Faithful Service from the Romanian President, Excellence in Research award from Ad Astra, Grigore Moisil award from Romanian Academy, Best Paper award from Journal Global Optimization).
- ▶ About 800 citations (without self citations) and h-index 16 in Web of Science; about 2400 citations and h-index 26 in Google Scholar.
- ▶ Project director of several research projects: EU-H2020 ELO-X, EU-H2020 TraDE-OPT, EU-FP7 EMBOCON, UEFISCDI-NO Grants ELO-Hyp, UEFISCDI-PCE ScaleFreeNet, UEFISCDI-TE MET-Net, UEFISCDI-TE MoCOBiDS.

## Published Papers

**Google scholar citations: 2400, h-index 26**

**Web of Science citations: 800, h-index 16**

### Journal papers (ISI with impact factor<sup>1</sup>)

1. **I. Necoara**, O. Ferqoc, *Linear convergence of dual coordinate descent on non-polyhedral convex problems*, partially accepted in Mathematics of Operations Research, 2020 (Q1 if/ais - Applied Mathematics).
2. **I. Necoara**, A. Nedich, *Minibatch stochastic subgradient-based projection algorithms for solving convex inequalities*, partially accepted in Computational Optimization and Applications, 2020 (Q1 if/ais - Applied Mathematics).
3. T. Ionescu, O. Iftime, **I. Necoara**, *Model reduction with pole-zero placement and high order moment matching*, partially accepted in Automatica, 2020 (Q1 if/ais - Automation & Control Systems).
4. **I. Necoara**, *General convergence analysis of stochastic first order methods for composite optimization*, Journal of Optimization Theory and Applications, doi: 10.1007/s10957-021-01821-2, 2021 (Q2 if/ais - Applied Mathematics).
5. **I. Necoara**, M. Takac, *Randomized sketch descent methods for non-separable linearly constrained optimization*, IMA Journal of Numerical Analysis, doi:10.1093/imanum/draa018, 2020 (Q1 if/ais - Applied Mathematics).
6. **I. Necoara**, T. Ionescu, *H2 model reduction of linear network systems by moment matching and optimization*, IEEE Transactions on Automatic Control, vol. 65, nr. 12, pp. 5328–5335, 2020 (ISSN: 0018-9286, Q1 if/ais - Automation & Control Systems).
7. T. Sun, **I. Necoara**, Q. Tran-Dinh, *Composite Convex Optimization with Global and Local Inexact Oracles*, Computational Optimization and Applications, vol. 76, nr. 1, pp. 69–124, 2020 (ISSN: 0926-6003, WOS: 000516365500001, IF=1.74, Q1 if/ais-Applied Mathematics).
8. **I. Necoara**, *Faster randomized block Kaczmarz algorithms*, Siam Journal on Matrix Analysis and Applications, vol. 40, nr. 4, pp. 1425–1452, 2019 (ISSN: 0895-4798, WOS: 000546977600009, Q1 if/ais - Applied Mathematics).

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<sup>1</sup>According to Uefiscdi - 2019: 32 Q1 and 10 Q2.

9. **I. Necoara**, P. Richtarik, A. Patrascu, *Randomized projection methods for convex feasibility problems: Conditioning and convergence rates*, Siam Journal on Optimization, vol. 29, nr. 4, pp. 2814–2852, 2019 (ISSN: 1052-6234, WOS: 000546996000017, IF=2,24, Q1 if/ais - Applied Mathematics).
10. A. Nedich, **I. Necoara**, *Random minibatch subgradient algorithms for convex problems with functional constraints*, Applied Mathematics and Optimization, vol. 80, nr. 3, pp. 801–833, 2019 (ISSN: 0095-4616, WOS: 000493654500009, IF=2.36, Q1 if/ais - Applied Mathematics).
11. **I. Necoara**, Yu. Nesterov and F. Glineur, *Linear convergence of first order methods for non-strongly convex optimization*, Mathematical Programming, vol. 175, no. 1, pp. 69–107, 2019 (ISSN: 0025-5610, WOS: 000465626900003, Q1 if/ais - Applied Mathematics, IF=2.66).
12. **I. Necoara**, A. Patrascu and F. Glineur, *Complexity of first order Lagrangian and penalty methods for conic convex programming*, Optimization Methods and Software, vol. 34, no. 2, pp. 305–335, 2019 (ISSN: 1055-6788, WOS: 000457978700005, Q2 if/ais - Applied Mathematics, Q1 ais - Computer Science, IF=1.18).
13. A. Patrascu, **I. Necoara**, *On the convergence of inexact projection first order methods for convex minimization*, IEEE Transactions on Automatic Control, vol. 63, no. 10, pp. 3317–3329, 2018 (ISSN: 0018-9286, WOS: 000446331200010, IF=5, Q1 if/ais - Automation & Control Systems).
14. A. Patrascu, **I. Necoara**, *Nonasymptotic convergence of stochastic proximal point methods for constrained convex optimization*, Journal of Machine Learning Research, vol. 18, no. 198, pp. 1–42, 2018 (ISSN: 1532-4435, IF=2.281, Q1 if/ais - Automation & Control Systems, WOS: 000435455100001).
15. **I. Necoara**, Yu. Nesterov, F. Glineur, *Random block coordinate descent for linearly-constrained optimization over networks*, Journal of Optimization Theory and Applications, vol. 173, no. 1, pp. 227–254, 2017 (ISSN: 0022-3239, IF=1.28, Q2 if/ais - Applied Mathematics, WOS: 000398739800011).
16. A. Patrascu, **I. Necoara**, Q. Tran-Dinh, *Adaptive inexact fast augmented Lagrangian methods for constrained convex optimization*, Optimization Letters, vol. 11, no. 3, pp. 609–626, 2017 (ISSN: 1862-4472, IF=0.93, Q2 if - Applied Mathematics, Q2 ais - Operations Res., WOS: 000395206800012).
17. N.A. Nguyen, S. Oлару, P. Rodriguez-Ayerbe, M. Hovd, **I. Necoara**, *Constructive solution of inverse parametric linear/quadratic programming problems*, Journal of Optimization Theory and Applications, vol. 172, no. 2, pp. 623–648, 2017, Special issue: Optimization, Control and Applications, in Honor of Boris T. Polyak's 80th Birthday (ISSN: 0022-3239, IF=1.28, Q2 if/ais - Applied Mathematics, WOS: 000394266600014).
18. **I. Necoara**, A. Patrascu, *Iteration complexity analysis of dual first order methods for conic convex programming*, Optimization Methods and Software, vol. 31, no. 3, pp. 645–678, 2016 (ISSN: 1055-6788, IF=1.62, Q2 if/ais - Applied Mathematics, Q1 ais - Computer Science, WOS: 000374781100013).
19. **I. Necoara**, D. Clipici, *Parallel random coordinate descent methods for composite minimization: convergence analysis and error bounds*, SIAM Journal on Optimization, vol. 26, no. 1, pp. 197–226, 2016 (ISSN: 1095-7189, IF=2.1, Q1 if/ais - Applied Mathematics, WOS: 000373631500008).
20. Q. Tran-Dinh, **I. Necoara**, M. Diehl, *Fast Inexact Decomposition Algorithms For Large-Scale Separable Convex Optimization*, Optimization (A Journal of Mathematical Programming and Operations Research), vol. 65, no. 2, pp. 325–356, 2016 (ISSN: 0233-1934, IF=0.93, Q2 if/ais - Applied Mathematics, WOS: 000367435800001).
21. **I. Necoara**, L. Ferranti, T. Keviczky, *An adaptive constraint tightening approach to linear MPC based on approximation algorithms for optimization*, Optimal Control: Applications and Methods, vol. 36, no. 5, pp. 648–666, 2015 (ISSN: 1099-1514, IF= 1.55, Q2 if - Applied Mathematics, Q3 ais - Automation & Control Systems, WOS: 000364580100005).

22. **I. Necoara**, *Computational complexity certification for dual gradient method: application to embedded MPC*, Systems and Control Letters, vol. 81, no. 7, pp. 49–56, 2015 (ISSN:0167-6911, IF=2.5, Q1 ais - Automation & Control Systems, Q2 if - Automation & Control Systems, WOS: 000357241500008).
23. A. Patrascu, **I. Necoara**, *Random coordinate descent methods for  $\ell_0$  regularized convex optimization*, IEEE Transactions on Automatic Control, vol. 60, no. 7, pp. 1811–1824, 2015 (ISSN: 0018-9286, IF=4.2, Q1 if/ais - Automation & Control Systems, WOS: 00035687140 0007).
24. **I. Necoara**, V. Nedelcu, *On linear convergence of a distributed dual gradient algorithm for linearly constrained separable convex problems*, Automatica, vol. 55, no. 5, pp. 209–216, 2015 (ISSN: 0005-1098, IF = 5.4, Q1 if/ais - Automation & Control Systems, WOS: 000354340200026).
25. A. Patrascu, **I. Necoara**, *Efficient random coordinate descent algorithms for large-scale structured nonconvex optimization*, Journal of Global Optimization, vol. 61, no. 1, pp. 19–46, 2015 (ISSN: 0925-5001, IF=1.7, Q1 if - Applied Mathematics, Q2 ais - Applied Mathematics, WOS: 000346913500 002), received Best Paper Award for a paper published in Journal of Global Optimization in 2015.
26. V. Nedelcu, **I. Necoara**, Q. Tran-Dinh, *Computational complexity of inexact gradient augmented Lagrangian methods: application to constrained MPC*, SIAM Journal on Control and Optimization, vol 52, no. 5, pp. 3109-3134, 2014 (ISSN: 0363-0129, IF=1.45, Q1 if/ais - Applied Mathematics, WOS: 000344748000018).
27. **I. Necoara**, V. Nedelcu, *Rate analysis of inexact dual first order methods: application to dual decomposition*, IEEE Transactions on Automatic Control, vol. 59, no. 5, pp. 1232 - 1243, 2014 (ISSN: 0018-9286, IF =4.2, Q1 if/ais - Automation & Control Systems, WOS: 000335218900009).
28. **I. Necoara**, A. Patrascu, *A random coordinate descent algorithm for optimization problems with composite objective function and linear coupled constraints*, Computational Optimization and Applications, vol. 57, no. 2, pp. 307-337, 2014 (ISSN: 0926-6003, IF = 1.5, Q1 if/ais - Applied Mathematics, WOS: 000331650100002).
29. Q. Tran-Dinh, **I. Necoara**, M. Diehl, *Path-Following Gradient-Based Decomposition Algorithms For Separable Convex Optimization*, Journal of Global Optimization, vol. 59, no. 1, pp. 59-80, 2014, (ISSN: 0925-5001, IF=1.7, Q1 if - Applied Mathematics, Q2 ais - Applied Mathematics, WOS: 000337163800004).
30. **I. Necoara**, *Random coordinate descent algorithms for multi-agent convex optimization over networks*, IEEE Transactions on Automatic Control, vol. 58, no. 8, pp. 2001–2012, 2013 (ISSN: 0018-9286, IF=4.2, Q1 if/ais - Automation & Control Systems, WOS: 000322364300009).
31. **I. Necoara**, D. Clipici, *Efficient parallel coordinate descent algorithm for convex optimization problems with separable constraints: application to distributed MPC*, Journal of Process Control, vol. 23, no. 3, pp. 243–253, 2013 (ISSN: 0959-1524, IF =2.7, Q2 if/ais - Automation & Control Systems, Q1 ais - Chemical Engineering, WOS: 000316585100001).
32. Q. Tran-Dinh, **I. Necoara**, I. Savorgnan, M. Diehl, *An inexact Perturbed Path-Following Method for Lagrangian Decomposition in Large-Scale Separable Convex Optimization*, SIAM Journal on Optimization, vol. 23, no. 1, pp. 95–125, 2013 (ISSN: 1052-6234, IF= 2.1, Q1 if/ais - Applied Mathematics, WOS: 000316857500005).
33. **I. Necoara**, V. Nedelcu, I. Dumitrache, *Parallel and distributed optimization methods for estimation and control in networks*, Journal of Process Control, vol. 21, no. 5, pp. 756–766, 2011 (ISSN: 0959-1524, IF = 2.7, Q2 if/ais - Automation & Control Systems, Q1 ais - Chemical Engineering, WOS: 000291770800009).

34. P. Tsiaflakis, **I. Necoara**, J.A.K. Suykens, M. Moonen, *Improved Dual Decomposition Based Optimization for DSL Dynamic Spectrum Management*, IEEE Transactions on Signal Processing, vol. 58, no. 4, pp. 2230–2245, 2010 (ISSN: 1053-587X, IF = 4.3, Q1 if/ais - Electrical Engineering, WOS: 000275370800025).
35. **I. Necoara**, J.A.K. Suykens, *Interior-point Lagrangian decomposition method for separable convex optimization*, Journal of Optimization Theory and Applications, vol. 143, no. 3, 567–588, 2009 (ISSN: 0022-3239, IF = 1.4, Q2 if/ais - Applied Mathematics, WOS: 000271460700008).
36. **I. Necoara**, B. De Schutter, T.J.J. van den Boom, J. Hellendoorn, *Robust control of constrained max-plus-linear systems*, International Journal of Robust and Nonlinear Control, vol. 19, no. 2, pp. 218–242, 2009 (ISSN: 1099-1239, IF = 3.39, Q1 if/ais - Applied Mathematics, WOS: 000262073600006).
37. **I. Necoara**, I. Dumitrache, *An accelerated optimization algorithm for distributed model predictive control*, Control Engineering and Applied Informatics, vol. 11, no. 3, pp. 16–23, 2009 (ISSN 1454-8658, IF=0.53, WOS: 000270291500003).
38. D. Doan, T. Keviczky, **I. Necoara**, M. Diehl, B. De Schutter, *A distributed version of Han's method for distributed model predictive control using local communications only*, Control Engineering and Applied Informatics, vol. 11, no. 3, pp. 6–15, 2009 (ISSN 1454-8658, IF=0.53, WOS: 000270291500002).
39. **I. Necoara**, I. Dumitrache, *Distributed Control in Networked Systems*, Control Engineering and Applied Informatics, vol. 11, no. 3, pp. 3-5, 2009 (ISSN 1454-8658, IF=0.53, WOS: 000270291500001).
40. **I. Necoara**, J.A.K. Suykens, *Application of a smoothing technique to decomposition in convex optimization*, IEEE Transactions on Automatic Control, vol 53, no. 11, pp 2674–2679, 2008 (ISSN: 0018-9286, IF = 4.2, Q1 if/ais - Automation & Control Systems, WOS: 000261801600021).
41. M. Baes, M. Diehl, **I. Necoara**, *Every nonlinear control system can be obtained by parametric convex programming*, IEEE Transaction on Automatic Control, vol. 53, no. 8, pp 1963–1967, 2008 (ISSN: 0018-9286, IF = 4.2, Q1 if/ais - Automation & Control Systems, WOS: 000259641500019).
42. **I. Necoara**, T.J.J. van den Boom, B. De Schutter, H. Hellendoorn, *Stabilization of max-plus-linear systems using model predictive control: The unconstrained case*, Automatica, vol. 44, no. 4, pp 971-981, 2008 (ISSN: 0005-1098, IF = 5.4, Q1 if/ais - Automation & Control Systems, WOS: 0002552187 00007).
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