

FRANCK IUTZELER

<http://www.iutzeler.org> • franck.iutzeler@math.univ-toulouse.fr

Updated in June 2024

Personal Information

Date of Birth:	September 2, 1987
Place of Birth:	Besançon (Doubs)
Nationality:	French
Familial status:	In a civil union, 1 child (2024)
Professional Address:	Office 1R1-225 – Statistics & Optimization team Institut de Mathématiques de Toulouse – Université Toulouse III - Paul Sabatier 118, route de Narbonne 31062 Toulouse Cedex 9
E-mail :	franck.iutzeler@math.univ-toulouse.fr
Webpage :	http://www.iutzeler.org

Current position

Since Sept. 2023	Professor <i>Professeur des Universités</i> Applied Mathematics	Université Toulouse III Institut de Mathématiques de Toulouse Statistics & Optimization team
------------------	---	--

Previous positions

09/2015-08/2023	Assistant Professor <i>Maître de Conférences</i> Applied Mathematics	Univ. Grenoble Alpes Laboratoire Jean Kuntzmann DAO team
01/2015-08/2015	Post-Doc Louvain-la-Neuve (Belgique)	Université Catholique de Louvain INMA team – with J. Hendrickx
01/2014-01/2015	Post-Doc Gif-sur-Yvette (France)	Supélec LANEAS team – with M. Debbah and R. Couillet

Diplomas

2021	Habilitation degree Defended December 15, 2021	Univ. Grenoble Alpes <i>Harnessing the Structure of some Optimization Problems</i> Jury: A. Leclercq-Samson (U. Grenoble, President), A. d'Aspremont (CNRS & ENS Paris, Reviewer), J. Bolte (U. Toulouse & TSE, Reviewer), A. Lewis (Cornell, Reviewer), J. Fadili (ENSI Caen), J. Mairal (INRIA Grenoble).
2013	Ph.D. degree Dir. Ph. Ciblat, W. Hachem Defended December 6, 2013	Telecom Paris <i>Distributed Estimation and Optimization for Asynchronous Networks</i> Jury: C. Richard (U. Nice, President), M. Rabbat (McGill, Reviewer), J. Hendrickx (Louvain-la-Neuve, Reviewer), G. Leus (Delft), P. Borgnat (ENS Lyon), P. Bianchi (Telecom Paris).
2010	Engineer degree M.Sc	Telecom Paris Paris VI

RESEARCH

Themes

My current research is centered around numerical optimization, notably for solving machine learning problems. More precisely, I'm interested in how to accelerate theoretically and/or practically optimization methods. The topics I mainly considered recently are:

- T1- Inertial methods *à la* Nesterov to accelerate the convergence of first order methods (e.g. the proximal gradient) or more generally fixed points of monotone operators – publications A8,A10,A17;
- T2- Distributed optimization problems where the agents only have access to a local part of the problem (e.g. data in machine learning, or partial oracles in optimization) and are coordinated in order to solve a global problem – publications A9,A11,A13,A15,A21,A24;
- T3- Randomized methods in which only a randomly selected part of the coordinates are updated at each iteration in order to reduce the synchronization delay incurred by the computation of all the coordinates (and thus reducing the exchanges in distributed systems) – publications A5,A16,A18,A21.
- T4- Finally, I am interested in the notion of structure in optimization problems, notably with respect to regularized learning problems. My aim is to mathematically and numerically characterize the structure of the iterates produced by optimization methods in order to exploit this information to a computational advantage – publis A17,A20,A21,P3.

Publications

This section lists my publications, most of them are available on my [webpage](#).

Bibliometry in June 2024 from [Google scholar](#): 1549 citations – h-index=18.

Preprints

- F. Iutzeler, E. Pauwels, S. Vaiter : [Derivatives of Stochastic Gradient Descent](#), arXiv 2405.15894, 2024.

Journal Articles & NeurIPS/ICML/COLT Conferences

Nota Bene: I chose to include in this section my journal articles as well as my articles published in NeurIPS, ICML, and COLT. I made this choice since these selective conferences (20% acceptance rate) lead to autonomous articles (without associated journal papers) with a depth similar to journal articles; for these reasons, they belong more in that category than with other conferences (IEEE CDC, ICASSP, etc.).

- A33- W. Azizian, F. Iutzeler, J. Malick, P. Mertikopoulos : [What is the Long-Run Distribution of SGD? A Large Deviations Analysis](#), International Conference on Machine Learning (ICML), 2024.
- A32- W. Azizian, F. Iutzeler, J. Malick, P. Mertikopoulos : [On the rate of convergence of Bregman proximal methods in constrained variational inequalities](#), to appear in SIAM Journal on Optimization, 2024.
- A31- S. Chraibi, F. Iutzeler, J. Malick, A. Rogozin : [Delay-tolerant Distributed Bregman Proximal Algorithms](#), to appear in Optimization Methods and Softwares, Dec. 2023.
- A30- W. Azizian, F. Iutzeler, J. Malick : [Exact Generalization Guarantees for \(Regularized\) Wasserstein Distributionally Robust Models](#), NeurIPS, Dec. 2023.
- A29- W. Azizian, F. Iutzeler, J. Malick : [Regularization for Wasserstein Distributionally Robust Optimization](#), to appear in ESAIM: Control, Optimisation, and Calculus of Variations, 2023.

- A28- G. Bareilles, F. Iutzeler , J. Malick : *Harnessing structure in composite nonsmooth minimization*, to appear in SIAM Journal on Optimization, 2023.
- A27- Y.-G. Hsieh, Y. Laguel, F. Iutzeler, J. Malick : *Push–Pull with Device Sampling*, to appear in IEEE Transactions on Automatic Control, 2023.
- A26- C. Dapogny, F. Iutzeler, A. Meda, B. Thibert : *Entropy-regularized Wasserstein distributionally robust shape and topology optimization*, Structural and Multidisciplinary Optimization, vol. 66, art. 42, 2023.
- A25- G. Bareilles, F. Iutzeler, J. Malick : *Newton acceleration on manifolds identified by proximal-gradient methods*, to appear in Mathematical Programming, 2023.
- A24- Y.-G. Hsieh, F. Iutzeler, J. Malick, P. Mertikopoulos : *Multi-Agent Online Optimization with Delays: Asynchronicity, Adaptivity, and Optimism*, Journal of Machine Learning Research, vol. 23, no. 78, pp. 1-49, 2022.
- A23- W. Azizian, F. Iutzeler, J. Malick, and P. Mertikopoulos: *The last-iterate convergence rate of optimistic mirror descent in stochastic variational inequalities* , 34th Annual Conference on Learning Theory (COLT), 2021.
- A22- D. Grishchenko, F. Iutzeler, J. Malick, M.-R. Amini: *Distributed Learning with Sparse Communications by Identification*, SIAM Journal on Mathematics of Data Science, vol. 3, no. 2, pp. 715-735, 2021.
- A21- F. Iutzeler, J. Malick: *Nonsmoothness in Machine Learning: specific structure, proximal identification, and applications*, Set-Valued and Variational Analysis, vol. 28, no. 4, pp. 661-678, 2020.
- A20- A. Burashnikova, Y. Maximov, M. Clausel, C. Laclau, F. Iutzeler, M.-R. Amini: *Learning over no-Preferred and Preferred Sequence of items for Robust Recommendation*, Journal of Artificial Intelligence Research, vol. 71, pp. 121-142, 2021.
- A19- Y.-G. Hsieh, F. Iutzeler, J. Malick, P. Mertikopoulos : *Explore Aggressively, Update Conservatively: Stochastic Extragradient Methods with Variable Stepsize Scaling*, Advances in Neural Information Processing Systems 34 (NeurIPS) spotlight, Dec. 2020.
- A18- G. Bareilles, Y. Laguel, D. Grishchenko, F. Iutzeler, J. Malick: *Randomized Progressive Hedging methods for Multi-stage Stochastic Programming* , Annals of Operations Research, vol. 295, no. 2, pp. 535-560, 2020.
- A17- G. Bareilles, F. Iutzeler : *On the Interplay between Acceleration and Identification for the Proximal Gradient algorithm*, Computational Optimization and Applications, vol. 77, no. 2, pp. 351–378, 2020.
- A16- D. Grishchenko, F. Iutzeler, and J. Malick : *Proximal Gradient Methods with Adaptive Subspace Sampling*, to appear in Mathematics of Operations Research, 2020.
- A15- K. Mishchenko, F. Iutzeler, and J. Malick : *A Distributed Flexible Delay-tolerant Proximal Gradient Algorithm*, SIAM Journal on Optimization, vol. 30, no. 1, pp. 933-959, 2020.
- A14- Y.-G. Hsieh, F. Iutzeler, J. Malick, and P. Mertikopoulos : *On the convergence of single-call stochastic extra-gradient methods*, Advances in Neural Information Processing Systems 32 (NeurIPS), Dec. 2019.
- A13- F. Iutzeler, J. Malick, and W. de Oliveira : *Asynchronous level bundle methods*, Mathematical Programming, vol. 184, pp. 319-348, 2020.
- A12- F. Iutzeler and L. Condat : *Distributed Projection on the Simplex and ℓ_1 Ball via ADMM and Gossip*, IEEE Signal Processing Letters, vol. 25, no. 11, pp. 1650-1654, Nov. 2018.
- A11- K. Mishchenko, F. Iutzeler, J. Malick, M.-R. Amini : *A Delay-tolerant Proximal-Gradient Algorithm for Distributed Learning*, International Conference on Machine Learning (ICML), PMLR 80:3584-3592, Stockholm (Sweden), July 2018.
- A10- F. Iutzeler and J. Malick : *On the Proximal Gradient Algorithm with Alternated Inertia*, Journal of Optimization Theory and Applications, vol. 176, no. 3, pp. 688-710, March 2018.
- A9- B. Joshi, F. Iutzeler and M.-R. Amini : *Large-scale asynchronous distributed learning based on parameter*

- exchanges*, International Journal of Data Science and Analytics, vol. 5, no. 4, pp. 223-232, June 2018.
- A8- F. Iutzeler and J. M. Hendrickx : *A Generic online acceleration scheme for Optimization algorithms via Relaxation and Inertia*, Optimization Methods and Software, vol. 34, no. 2, 2019.
- A7- B. Joshi, M.-R. Amini, I. Partalas, F. Iutzeler, Yu. Maximov : *Aggressive Sampling for Multi-class to Binary Reduction with Applications to Text Classification*, Advances in Neural Information Processing Systems 30 (NeurIPS), Dec. 2017.
- A6- F. Iutzeler : *Distributed Computation of Quantiles via ADMM*, IEEE Signal Processing Letters, vol. 24, no. 5, pp. 619-623, May 2017.
- A5- P. Bianchi, W. Hachem, and F. Iutzeler : *A Stochastic Coordinate Descent Primal-Dual Algorithm and Applications to Distributed Optimization*, IEEE Transactions on Automatic Control, vol. 61, no. 10, pp. 2947-2957, Oct. 2016.
- A4- F. Iutzeler, P. Bianchi, P. Ciblat, and W. Hachem : *Explicit Convergence Rate of a Distributed Alternating Direction Method of Multiplier*, IEEE Transactions on Automatic Control, vol. 61, no. 4, pp. 892-904, Apr. 2016.
- A3- A. Abboud, F. Iutzeler, R. Couillet, M. Debbah, and H. Siguerdidjane : *Distributed Production-Sharing Optimization and Application to Power Grid Networks*, IEEE Transactions on Signal and Information Processing over Networks, vol. 2, no. 11, pp. 16-28, March 2016.
- A2- F. Iutzeler, P. Ciblat, and W. Hachem : *Analysis of Sum-Weight-like algorithms for averaging in Wireless Sensor Networks*, IEEE Transactions on Signal Processing, vol. 61, no. 11, pp. 2802-2814, June 2013.
- A1- F. Iutzeler, P. Ciblat, and J. Jakubowicz : *Analysis of max-consensus algorithms in wireless channels*, IEEE Transactions on Signal Processing, vol. 60, no. 11, pp. 6103-6107, November 2012.

International Conferences

- C13- V. Mercklé, F. Iutzeler, I. Redko : *The Hidden Convex Optimization Landscape of Two-Layer ReLU Networks*, Blogpost Track at ICLR, 2024.
- C12- Y.-G. Hsieh, F. Iutzeler, J. Malick, P. Mertikopoulos : *Optimization in Open Networks via Dual Averaging*, 60-th IEEE Conference on Decision and Control (CDC), Austin (USA), 2021.
- C11- M. Chastan, A. Lam, F. Iutzeler: *Unsupervised density based machine learning for abnormal leveling signatures detection*, SPIE Advanced Lithography, Online, Feb. 2021.
- C10- D. Grishchenko, F. Iutzeler, M.-R. Amini: *Sparse Asynchronous Distributed Learning*, 27-th International Conference on Neural Information Processing (ICONIP), Online, November 2020.
- C9- D. Grishchenko, F. Iutzeler, J. Malick: *Distributed First-order Optimization with Tamed Communications*, Signal Processing with Adaptive Sparse Structured Representations (SPARS workshop), Toulouse (France), July 2019.
- C8- B. Joshi, F. Iutzeler, M.-R. Amini: *Asynchronous Distributed Matrix Factorization with Similar User and Item Based Regularization*, 10-th ACM Conference on Recommender Systems (RecSys), Boston (USA), Sept. 2016.
- C7- F. Iutzeler, P. Bianchi, P. Ciblat and W. Hachem: *Linear Convergence Rate for Distributed Optimization with the Alternating Direction Method of Multipliers*, 53-rd IEEE Conference on Decision and Control (CDC), Los Angeles (USA), December 2014.
- C6- P. Bianchi, W. Hachem and F. Iutzeler: *A Stochastic Primal-Dual algorithm for Distributed Asynchronous Composite Optimization*, 2-nd IEEE Global Conference on Signal and Information Processing (Global-Sip), Atlanta (USA), December 2014.
- C5- P. Bianchi, W. Hachem, and F. Iutzeler : *A Stochastic Coordinate Descent Primal-Dual Algorithm And Applications*, 24-th IEEE International Workshop on Machine Learning for Signal Processing (MLSP),

Reims (France), September 2014.

- C4- F. Iutzeler , P. Bianchi, P. Ciblat and W. Hachem: *Asynchronous Distributed Optimization using a Randomized Alternating Direction Method of Multipliers*, 52-nd IEEE Conference on Decision and Control (CDC), Florence (Italy), December 2013.
- C3- F. Iutzeler and P. Ciblat: *Fully-distributed spectrum sensing: application to cognitive radio*, 21-st European Signal Processing Conference (EUSIPCO), Marrakech (Morocco), September 2013.
- C2- F. Iutzeler, P. Ciblat, W. Hachem, and J. Jakubowicz : *A new broadcast based averaging algorithm over wireless sensor networks*, 37-th IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP), Kyoto (Japan), March 2012.
- C1- F. Iutzeler, J. Jakubowicz, W. Hachem and P. Ciblat : *Distributed estimation of the maximum value over a wireless sensor network*, 45-th Asilomar Conference on Signals, Systems, and Computer, Pacific Grove (USA), November 2011.

Other articles and notes

- J.-F. Boulanger, F. Corset, F. Iutzeler, J. Lelong : *Classifying and explaining defects with small data for the semiconductor industry*, exposition of an industrial collaboration, to appear in MathS in Action, 2022.
- C. Laclau, F. Iutzeler, I. Redko : *Rank-one partitioning: formalization, illustrative examples, and a new cluster enhancing strategy* , unpublished note arxiv:2009.00365, 2020.

Funding and Students

Fundings

- ANR JCJC – STROLL: Harnessing Structure in Optimization for Large-Scale Learning – 2019-2023
PI – 145kE
- PGMO - PRMO – Distributed Optimization on Graphs with Flexible Communications – 2019-2020
PI – 5kE – with D. Grishchenko (LJK, Grenoble).
- MIAI Chair – Optimization and Learning – 2019-2023
220+kE – with J. Malick (PI), P. Mertikopoulos, R. Hildenbrand (Grenoble).
- CNRS INSMI and INS2I - AI and ML – Optimization for implicit recommender systems – 2017-2018
PI – 8kE – with M. Clausel (IECL, U. Lorraine), M.-R. Amini (LIG, Grenoble).
- INDEX Grenoble Alpes - Initiatives de Recherche Stratégiques – Distributed Optimization for Large-scale Learning – 2017-2020
PI – 110kE – with J. Malick (LJK, Grenoble), M.-R. Amini (LIG, Grenoble).
- INDEX Grenoble Alpes - Pedagogical Initiatives – Optimisation Distribuée pour le Big Data – 2017-2019
30kE – avec J. Malick (Porteur), A. Iouditski, R. Hildenbrand, J. Lelong, L. Viry (LJK, Grenoble).
- PGMO - PRMO – Advanced nonsmooth optimization methods for stochastic programming – 2016-2018
125kE – avec J. Malick (PI) (LJK, Grenoble), W. Van Ackooij (EDF, Paris), W. de Oliveira (UERJ, Rio de Janeiro, Brésil).
- Young researchers GDR ISIS/GRETSI – “ON FIRE” Interferometry Calibration – 2016-2018
7kE – with N. El Korso (co-PI), A. Breloy (LEME, Paris X), R. Flamary (Lagrange, Nice).

Ph.D. Students

- Waïss Azizian – Mathematics of robust & adversarial optimization – 2022-40% – with J. Malick and P. Mertikopoulos – funded by “allocation normalien”

- Victor Mercklé – Optimisation convexe et réseaux de neurones – 2022-50% – with I. Redko – funded by the ANR of I. Redko
 - Sélim Chraibi – Distributed and robust numerical optimization for ML – 2019-50% – with J. Malick – funded by MIAI (interrupted in 2020/2021 for health reasons)
-

- Yu-Guan Hsieh – Variational inequalities in machine learning – 2019-2023
30% – with J. Malick and P. Mertikopoulos – funded by MIAI
Now: Researcher at Apple Paris. **UGA best thesis award**
- Gilles Bareilles – Harnessing Structure in Optimization for Large-Scale Learning – 2019-2022
80% – with J. Malick – funded by ANR STROLL
Now: Post-doc at Czech Technical University, Prague.
- Mathias Chastan – Détection de défauts dans les wafers – 2019-2022
Industrial thesis with ST MicroElectronics (Crolles) – with J. Malick and A. Lam (ST)
Now: Consultant in Data Science, Paris.
- Dmitry Grishchenko – Distributed Optimization for Learning – 2017-2020
50% – with J. Malick and M. Amini – funded by IDEX IRS
Now: Engineer, Google, Berlin.
- Bikash Joshi – Large-Scale classification and recommendation – 2014-2017
50% – with M. Amini – funded by Labex Persyval
Now: Data Scientist, Elsevier, Amsterdam.

Interns

- Florian Vincent – UGA – 2023
- Julien Prando – UGA – 2022
- Waiss Azizian – ENS and MVA – 2020,2021,&2022
- Gilles Bareilles – ENSTA and MVA – 2019
- Yu-Guan Hsieh – ENS and MVA – 2019
- Konstantin Mishchenko – MIPT and MASH – 2017

Service

- Elected to the liaison committee of the MODE groupe (thematic group on Optimization&Decision) of SMAI (French equivalent of SIAM) – 2020-now
- Elected to the ML & AI group of the French Statistical Society (SFDS) – 2021-now
- PhD jurys : D. Babichev (2018, Adv. F. Bach), Renato Vizute (2022, *reviewer*, Adv. E. Panteley & P. Frasca), William Piat (2023, *reviewer*, Adv. J. Fadili & F. Jurie), Kimang Khan (2023, Adv. B. Gaujal & N. Gast), A. Guitart (2023, chair, Adv. D. Delahaye)
- Jury of the 2021 PGMO PhD prize

Reviewing

- Learning Conferences: NeurIPS (2017-2022), ICML (2018-2022), ICLR (2021-), AIStats (2022)
- Optimization journals: SIOPT, Math. Prog. JOTA, JOGO, OMS, OJMO

- Signal Processing/Control journals: IEEE TSP, TAC, TSIPN, SPLetters, Automatica
- Projects: ANR, IDEX Grenoble Alpes, Research Council of Canada

Local Responsibilities

- Co-organizer of the [SPOT](#) seminar series – 2023-NOW
- Member of the research commission of the Maths/CS faculty of UGA – 2018-2023
- Elected member of the LJK laboratory council – 2018-2023
- Elected member of the research council of Telecom Paris – 2011-2013
- President of the Ph.D. students association at Telecom Paris – 2011-2012

Event Organization

- Local chair of the ECML/PKDD 2022 in Grenoble (750 in-person participants + 350 online)
- Co-organizer of the “Grenoble Optimization Days”, two days in June 2018
- Organizer of the graduate course “GdR MOA” given by J. Mairal before SMAI-MODE 2018 (Autrans, France)
- Organization committee of CAp 2017 (Grenoble, France)

Seminars and oral communications

- June 2024 : Distributionally Robust Optimization & Statistical Guarantees, Journées Contrôle et Optimisation, Pau (France)
- June 2024 : Distributional Robustness, ENAC, Toulouse (France)
- Oct. 2023 : Distributionally Robust Optimization and Statistical learning, MADSTAT, Toulouse School of Economics (France)
- Oct. 2023 : Distributionally Robust Optimization and Statistical learning, SPOT, Toulouse (France)
- Jan. 2023 : on Wasserstein Distributionally Robust Optimization, Séminaire Proba-stat, Nice (France)
- Jan. 2023 : on Wasserstein Distributionally Robust Optimization, Séminaire Optimisation et Statistique, Toulouse (France)
- June 2022 : Identification et exploitation de structure en apprentissage régularisé, Journées MODE, Limoges (France)
- May. 2022 : Identifying & Using Structure in Machine Learning, Rencontres Statistiques Lyonnaises, Lyon (France)
- Apr. 2022 : Identifying & Using Structure in Machine Learning, INRIA Maasai, Nice (France)
- Aug. 2021 : Harnessing Structure in Composite Optimization problems, IFIP TC7 (virtual).
- June 2021 : Harnessing Structure in Regularized Empirical Risk Minimization, CAp (virtual).
- Nov. 2020 : Nonsmooth regularizations in Machine Learning: structure of the solutions, identification, and applications, IMAG Montpellier (virtual).
- Sep. 2020 : a Randomized Proximal Gradient Method with Structure-Adapted Sampling, Journées SMAI MODE (virtual).
- Mar. 2020 : Harnessing Structure in Optimization for Machine Learning, Optimization for Machine Learning, CIRM (France).
- Oct. 2018 : Distributed Learning with Sparse Communications and Structure Identification, Séminaire INRIA Magnet, Lille (France).
- Jul. 2018 : Distributed Learning with Sparse Communications and Structure Identification, International Symposium on Mathematical Programming (ISMP), Bordeaux (France).
- June 2018 : Distributed Learning with Sparse Communications and Structure Identification, Séminaire Polaris, Grenoble (France).
- June 2018 : Distributed Learning with Sparse Communications and Structure Identification, Séminaire D.A.T.A., Grenoble (France).

- May 2018 : Distributed Learning with Sparse Communications and Structure Identification, Journées de Statistique, Saclay (France).
- Apr. 2017 : Monotonicity, Acceleration, Inertia, and the proximal gradient algorithm , Optimization and Statistical Learning, Les Houches (France).
- Nov. 2016 : Gossip Algorithms: Tutorial and Recent advances , SMILE in Paris, Paris (France).
- Oct. 2016 : Modified fixed points iterations and applications to randomized and accelerated optimization algorithms , Workshop Cavalieri, Paris (France).
- Sep. 2016 : Practical acceleration for some optimization methods using relaxation and inertia , Seminaire d'Analyse non lineaire and Optimisation, Avignon (France).
- June 2016 : Practical acceleration for some optimization methods using relaxation and inertia , Seminaire Signal-Image de l'Institut de Mathematiques de Bordeaux, Bordeaux (France).
- June 2016 : Practical accelerations for the alternating direction method of multipliers , PICOF Workshop , Autrans (France).
- May 2016 : Descente par coordonnées stochastique dan l'algorithme du point fixe and application aux méthod d'optimisation , Congres d'Analyse Numerique (CANUM) , Obernai (France).
- Nov. 2015 : Relaxation and Inertia on the Proximal Point Algorithm , Titan Workshop , Grenoble (France).
- Nov. 2015 : Relaxation and Inertia on Fixed point algorithms , Journées EDP Rhone-Alpes-Auvergne (JERA), Clermont-Ferrand (France).
- Mar. 2015 : Online Relaxation Method for Improving Linear Convergence Rates of the ADMM , Benelux meeting on Systems and Control, Lommel (Belgium).
- Aug. 2014 : Asynchronous Distributed Optimization , Journées MAS, Toulouse (France).
- May. 2014 : Distributed Optimization Techniques for Learning over Big Data , 2014 ESSEC/Centrale-Supélec Conference Bridging Worlds in Big Data, ESSEC CNIT Campus, La Défense Paris (France).
- Apr. 2014 : Distributed Asynchronous optimization using the ADMM, Large graphs and networks seminar, Université Catholique de Louvain-la-Neuve , ICTEAM institute, Louvain-La-Neuve (Belgium).
- Jul. 2013 : Distributed Optimization using a Randomized Alternating Direction Method of Multipliers , Digicosme Research Day, Digiteo, Gif-sur-Yvette.
- Nov. 2012 : Distributed Estimation of the Average Value in Wireless Sensor Networks , Alcatel-Lucent Chair Seminar, Supélec, Gif-sur-Yvette.
- Apr. 2012 : Some useful results on Matrix Products for Signal Processing , Ph.D. Candidates Seminar, Telecom ParisTech, Paris.
- Oct. 2011 : Distributed Maximal Value Estimation , Ph.D. Candidates Seminar, Telecom ParisTech, Paris.

TEACHING

Mathematics department (2023-)

This part corresponds to my teaching as professor since September 2023.

Undergraduate Level

- *Introduction to Statistical Inference* – L3 Math. – 2023-NOW
Course+Exercises+Labs & head – 30 h/year
- *Statistical Inference* – L3 Math. – 2023-NOW
Labs – 20 h/year

Graduate courses

- *Advanced Statistical Learning* – M2 SID – 2023-NOW
Decomposition of risk, model selection and aggregation, kernel methods, etc.
Course+Labs & head – 50 h/year

- *Statistics* – M1 MAPI3/ESR – 2023-NOW
Mathematical statistics, tests, least-squares
Exercises+Labs – 30 h/year

UFR IM2AG (2015-2023)

This part corresponds to my teaching as assistant professor between September 2015 and August 2023.

Undergraduate Level

- *Introduction to Applied Mathematics* – L1 Math.& C.S. – 2021-2023
Course+Labs & co-head – 50 h/year – 350 students
- *Statistics for biologists* – L2 Biology – 2018-2023
Course+Tutorials – 24 h/year
- *Maths for engineers* – L2 Engineering – 2015-2019
Tutorials – from 18 to 78 h/year
- *Applied Maths* – L3 Biology – 2015-2016
Course – 30 h/year
- *Calculus* – L1 Maths-CS – 2015-2016
Tutorials – 50 h/year

Graduate courses

- *Mathematics of Operation Research* – M1 Applied Maths. – 2018-2023
Basics of game theory, spectral graph theory, optimal transport.
Course – 18 h/year
- *Numerical Optimization* – M1 Applied Maths. – 2016-2023
Tutorial on proof techniques and Labs <https://github.com/iutzeler/NumericalOptimization>.
Tuto/Course and Labs – 26 h/year
- *Introduction to Python for Data Science* – M1 Stat/Data Science – 2017-2023
Mixed Course/Lab as Jupyter notebooks available at <https://github.com/iutzeler/Introduction-to-Python-for-Data-Science>
Course/Labs – 30 h/year
- *Introduction to Operation Research* – M2 Stat/Data Science – 2017-2023
LP, MILP, QP with CVX{R,Py}
Labs – 12 h/year
- *Refresher Course in Numerical Analysis and Optimization* – M2 App. Maths/C.S. – 2017-2023
One-week crash course before the second year of Master.
Course/Tuto/Labs – Between 10 and 20 h/year
- *Convex and Distributed Optimization* – M2 App. Maths/C.S. – 2016-2019
Optimization in the context of multiple machine. Course/Tuto/Labs – Between 15 and 35 h/year

Teaching Assistant (2011-2015)

at Université Catholique de Louvain

- *Linear Automatic Control* – Bachelier (L3) Maths/CS/Eng. – 2014-2015
Tutorials – 30 h

at Université de Marne la vallée

- *Information Theory* – 2nd year engineers (M1) – 2013-2014
Course and Tutorials – 30 h
- *Calculus* – L2 Maths – 2012-2013
Tutorials – 36 h

at Telecom Paris

- *Digital Communications* – 2nd year engineers (M1) – 2011-2013
Tutorials and Labs – 30 h / year