Curriculum Vitae

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2009-: Professor in applied mathematics at Université Toulouse 1 Capitole and member of TSE (Toulouse School of Economics) within GREMAQ. Promoted First-class Professor by the CNU (French-National University Council) on September 1, 2013.

2012-2015: Director of the CNRS Research Group 2932 JEMMA “Game Theory: Mathematical modeling and applications”. With 29 teams and 110 members in France. With P. Cardaliaguet (Paris-Dauphine) and N. Vieille (HEC).


2008-2009: Temporary posting on a Game Theory chair at Ecole Polytechnique, via the Decision Sciences group X-HEC-ENSAE. Member of the Economic Department and CMAP (Applied Maths Center) at Ecole Polytechnique.
2007-2008: Temporary posting at French research agency CNRS (math section) within CEREMADE (Centre de Recherches en Mathématiques de la Décision) at University Paris-Dauphine.
1999-2008: Assistant professor in applied mathematics at Université Paris-Dauphine and CEREMADE member.
1995-1998: PhD student at Université Paris I.

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April 15, 2015
1 Research production

Main fields of interest: game theory, optimization and control, discrete-time stochastic processes, economic theory, convex analysis, combinatorics.

Publications:


(2) 2-player repeated games with lack of information on one side and state independent signalling. Mathematics of Operations Research, November 2000, volume 25, number 4, pp. 552-572. Proof of the existence of equilibria in repeated games with two players, lack of information on one side and state independent signalling.


(6) Ramsey-type results on singletons, co-singletons and monotone sequences in large collections of sets (with S. Gravier, F. Maffray et N. Trotignon, laboratoire Leibnitz, INPG, Grenoble). European Journal of Combinatorics, July 2004, volume 25, pp.719-734. Extremal set theory: existence, inside a given family of sets, of certain particular sub-families (such as locally monotonic, singletons or co-singletons sub-families).


(26) The value of Markov chain games with lack of information on both sides. with F. Gensbittel, to appear in Mathematics of Operations Research. hal-00745986.


Proceedings:


Pre-publications:


(33) Limit Value for Optimal Control with general means, with X. Li and M. Quincampoix. March, 2015, arXiv:1503.05238 Submitted to Discrete and Continuous Dynamical System - A


(36) Strongly Uniform Equilibrium in Repeated Anonymous Random Matching Games, with Joyee Deb, NYU and Julio Gonzalez-Diaz, U. Santiago de Compostela 2014. Submitted to Games and Economic Behavior


In progress:
- Inspection Games, with Daniel Garrett
- On the limit value for gambling houses, with R. Laraki, Ecole Polytechnique.
- Modelling Flexibility in the electricity industry, with C. Crampes.
- Nash Bargaining and Outside Liquidity, with Stéphane Villeneuve, TSE.
- A Folk Theorem for Finitely Repeated Games with Public Monitoring, avec J. Hörner, Yale.
- Information Structures through zero-sum Games, or the value of information, with F. Gensbittel.
- A model of strategic beliefs in finance (with I. Ben Tahar, Paris-Dauphine).
- Cooperation in 2-player repeated games with trivial observation.

Miscellaneous:
- On the works of Lloyd Shapley (Sur les travaux de Lloyd Shapley), TSE Students Magazine, spring 2013.
- Redaction of 3 unpublished chapters for the collective project Oiko Nomia: Zero-sum games (12 pages), Refinements of Nash Equilibria for Strategic Games (12 pages), Games in extensive form (the finite case) (25 pages). see http://www.ceremade.dauphine.fr/ renault/publij.html
2 Animation of research

Toulouse School of Economics: member of the MADS (Decision Mathematics and Statistics) group, and secondarily of the Economic Theory group.

2012-2015. Director of the GDR 2932 of CNRS: JEMMA “Théorie des Jeux: Modélisation Mathématique et Applications”. Co-responsibles of the GDR: P. Cardaliaguet (Paris-Dauphine) and N. Vieille (HEC). This GDR mainly depends on INSMI (Institut National des Sciences Mathématiques et de leurs Interactions), it is composed of 28 teams from different departments in all over France and has a little more than one hundred researchers in maths, economics, computer science and biology.

2015: Member of the CNRS PEPS project: Mathematical Models and Social Interactions, with F. Gensbittel (TSE), S. Lovo and T. Tomala (HEC) about Hybrid Dynamic Games (Playing at discrete times in a continuous time environment)

Member of the ANR project: “Jeudy” (Long time behavior for dynamic games in continuous and discrete time), 2011-2015, coordinated by Marc Quincampoix with researchers from Brest, HEC Paris, Polytechnique and Université Toulouse 1 Capitole.

Member of the ANR project OLGA (Online Learning in Games, 2014, head R. Laraki, Lamsade, Université Paris-Dauphine).

Member of TSE recruiting committee, 2012-.

Member of the scientific council of the School for advanced studies of Luchon, 2014-:
http://www.quantware.ups-tlse.fr/ecoledeluchon/conditions.html

2013- 2014: Member of the ARP consortium: “Mathematics and the complexity of the System Earth” (ARP MathsInTerre), by the French ANR : http://mathsinterre.fr/index.php

2014- GREMAQ correspondent for the GdT Jeux of the GDR IM Informatique-Mathématiques.

2011-2012: Member of the PEPS Interactions INS2I (computer science) project from CNRS “Properties of zero-sum parity stochastic games with imperfect observation” (Stochastic games and verification). Head of the project Hugo Gimbert, CNRS INS2I, Labri Bordeaux.

Member of the GDR (Research groups of CNRS) MOA (Mathematics of Optimization and Application) since 2009.


In charge of the TSE group “Decision mathematics” and member of the department committee (CODEP) of TSE (2010-2012).

Member of the board of the MODE (Mathematics of Optimization and Decision) group of the french SMAI (Society for Applied and Industrial Mathematics) since february 2008.


PhD supervision


Advisor of the PhD thesis of Bruno Ziliotto, applied maths at Toulouse 1. 2012- Stochastic games. PhD to be defended on September 18, 2015.

Co-advisor of the PhD thesis of Sylvain Gibaud (probability, with X. Bressaud, University Toulouse 3): Systèmes de particules avec interactions de type jeux, 2014-

Temporary supervisor of the PhD of Alexander Sandukovskiy (2011, Economics, TSE).

Jury member of PhD theses

University Paris-Est, supervisor F. Leurent.


Conference and seminar organizations


Main organizer of the international conference on game theory “Games Toulouse 2011”, September 12-16, 2011 Toulouse. 50 invited speakers, around 130 participants. Other organizers: R. Laraki (X), M. Quincampoix (Brest), S. Sorin (Paris 6), T. Tomala (HEC) and X. Venel (PhD, Toulouse 1). See the website http://sites.google.com/site/gametoulouse2011/


Member of the organizing committee for the forthcoming applied maths SMAI-MODE 2016 in Toulouse.

Corresponding member (UT1-TSE) of the organization committee for the 20th World Congress of the International Federation of Automatic Control, taking place in Toulouse, IFAC 2017.


Co-organizer of the conference “Games and Strategy in Paris” (June 11-13, 2012, Sylvain Sorin 60’s birhtday).


Member of the scientific committee for the applied maths SMAI-MODE 2014 Congress in Rennes,
26-28 mars 2014. Organizer of 2 sessions “Games and Economics”.

Member of the scientific committee for the applied maths SMAI-MODE 2012 congress in Dijon (28-30 mars 2012). http://math.u-bourgogne.fr/mode2012/

Member of the organizing committee of the 15th French-German optimization conference (with invited country Austria): Autriche), Toulouse September 19-23, 2011. 155 participants, Head of the organization Pierre Maréchal (University Toulouse 3).

Member of the International Program Committee of the international conference “Applications of Game Theory, Policies and Decisions”, Hyderabad/Jaipur (Inde), 12-14 december 2011.


Organizer, with Adrien Blanchet, of the MAD seminar “Mathématiques de la décision” (Decision mathematics) at TSE (January 2010-June 2011).


Organizer of the mini-symposium “Jeux Dynamiques” (Dynamic Games) at the SMAI congress on 2009, may 25, with invited speakers P. Cardaliaguet (Brest), B. de Meyer (Paris 1) et G. Vigeral (Paris 6).

Organizer of the 2008-2009 working group/seminar “Advances in Game Theory” at Ecole Polytechnique every friday morning: http://sites.google.com/site/jrenaultsite/advances-in-game-theory. 29 fridays, 32 speakers with 2 hours seminars:


3 Conferences - Seminars - Visits

Invited talks abroad are in italic.

2014-2015:

Workshop (+possibly tutorials) on Stochastic Games, NUS and Institute for Mathematical Sciences, Singapore. November 30-December 4, 2015.


The Second Singapore Joint Economic Theory Workshop, National University of Singapore and SUTD, April 14, 2015.
Seminar at SUTD, Singapore University of Technology and Design, department Engineering Systems and Design: April 13, 2015
Paris Game Theory Seminar, November 17, 2014.
Workshop “Optimisation et processus dynamiques en apprentissage dans les problèmes inverses”, Sestri Levante (Italie), September 8-12 2014.

2013-2014:
Game Theory seminar of l’Institut de Recherche en Informatique de Toulouse (IRIT), March 17, 2014.

2012-2013:
Seminars at the Center for Rationality, Jerusalem June 2 2013 et at the math department de Tel-Aviv University, June 4 2013.
Economic Department Seminar, Université de Caen, May 13, 2013.
Summer school and workshop on Dynamic Games and Applications, December 19-21 2012, Valparaiso, Center for Mathematical Modeling, Chile.
Economic Department Seminar, Leicester University, November 28, 2012.

2011-2012:
Invited speaker (plenary speaker) at the 23rd International Conference of Game Theory at Stony Brook (USA, July 15-19 July 2012.
Invited talk, Quantitative Economics seminar, Maastricht University, 21-06-2012.
Invited talk, colloquium of the IMT, Maths Institute of Toulouse, 15-06-2012.
Participant in the annual meeting of the research group GDR MOA (Maths of Optimization and Applications), June 4-7 2012, Guadeloupe.
Invited talk, seminar of the MIP team (Maths for Physics and Industry) of IMT, University Toulouse 3, 22-05-2012.

Invited talk, Institute of Mathematical Economics seminar, Bielefeld Germany 07-02-2012.

2010-2011:
- Invited speaker, Tel-Aviv international Workshop on Game Theory, June 20-23 2011 (organizers: E. Solan and E. Lehrer)
- Seminar at LPT (Theoretical Physics Laboratory), University Toulouse 3, June 7 2011.
- Invited seminar, Bocconi University, Milan May 10 2011.
- Invited speaker at the Workshop “Stochastic methods in Game Theory”, Erice (Sicile), September 6-8 2010.

Speaker at the summer school ‘Transmission d’information, jeux répétés, apprentissage” (Information transmission, repeated games and learning) of the GDR 2932 “Théorie des Jeux: Modélisation mathématique et applications”, Aussois, 31 mai-4 juin 2010.
Speaker at the probability seminar, IMT Toulouse Maths Institute, April 6, 2010.
Invited speaker (plenary session) in the 2010 conference of the MODÉ group (mathematics of optimization and decision) of SMAI, Limoges, March 24-26 2010.
Participation as invited speaker in the workshops:
- “Structural aspects of rationality”, December 13-14 2009, theoretical computer science, Kanpur (Inde).
3 introductory seminars on Game Theory at TSE: November 5,12 and 26, 2009.
Visit at LABRI, Laboratoire Bordelais de Recherche en Informatique, may 10-11 2010: collaborations with Hugo Gimbert, Sylvain Sorin, Wieslaw Zielonka, Xavier Vienel, Youssouf Oualhadj. Occasional guest in the team Combinatoire et Optimisation, Université Paris 6, Spring 2010, collaborations with Rida Laraki et Sylvain Sorin.

2007/2008: Speaker in the 13ème International Symposium on Dynamic Games and Applications, June 3 to July 3 at Wroclaw (Poland) and at the 3rd World congress in Game Theory at Northwestern University (Evanston, July 13-17). - Speaker at the conference MODE’08 (Mathematics of Optimization and Decision) of the french SMAI (Society for Applied and Industrial Mathematics) in Clermont-Ferrand, February 26-28, 2008. - **Invited speaker at the Second General Equilibrium Workshop in Rio (Brazil), January 28-30, 2008.** - Invited speaker at the “Workshop on Strategic Communication and Networks” in Valencia (Spain), September 19-20, 2007. - Seminars given at the “Séminaire Parisien d’Optimisation” at IHP on September 24, 2007, at the Applied Analysis seminar of Brest University on February 12, 2008. - Invited speaker at the International Workshop on Applied Probability (IWAP 2008) at the Technological University of Compiègne, France, July 7-10 2008. **Invited speaker at the “Workshop on Recent Advances in Repeated Games” at Stony Brook (USA) July 20-22.** Invited speaker at the “Games” event of LABRI (Laboratoire Bordelais de Recherche en Informatique), Bordeaux June 4-5. Visit to Tel-Aviv University, invited by Ehud Lehrer and Eilon Solan, June 22-26, within the network: Strategic Use of Information in Dynamic Games.

Invited speaker at the workshop “Dynamiques et Optimisation” (dynamics and optimization) of the ANR research group ”Optimisation, jeux et dynamique de la décision avec coûts au changement : modélisation et algorithmes”, June 9-11, Université Paris 6. Short presentation for the AERES visit to CEREMADE, December 21 2007.

Speaker at the CASYS team seminar at LJK, Grenoble (France) on April 1st, and at the ACSIOM seminar in Montpellier on April, 8.


1998/1999: - 10th Stony Brook Game Theory International Conference (July, 7-23, 1999). - 7th conference of the group MODE (March 18-20, 1999), at Orléans University.


Ten or so presentations at the Paris Game Theory Seminar at IHP (Institut Henri Poincaré, Paris) since 1997, lately in October, 2014.
4 Teaching


Member of the math department council of University Toulouse 1: 2011-2014. Organizer of the Pi-Day (workshop with 15mn talks), march 14, 2014.

Spring 2012: Member of the prospection comittee (4 people, directed by H. Cremer) for the position of Director of the School Toulouse Scool of Economics, taken by J-Philippe Lesne.


- Basics of Game Theory, lecture notes , M2 TSE 2014, 121 pages.
- Programmation Dynamique et Jeux Stochastiques (Dynamic Programming and Stochastic Games), M2 OJME Paris 6 2012, 22 pages.
- Mathématiques de la Décision (Decision Maths), L3 Eco Math Ecole d’Economie de Toulouse 2013, 48 pages.
- A mathematical introduction to game theory: slides 3h, 52 pages, November 2009 TSE. see http://sites.google.com/site/jrenaultsite/enseignement (in French) slides 52 pages.

Teaching in Game Theory:

2014 Co-supervision, with X. Bressaud, of the master thesis of Sylvain Gibaud, (M2 Maths fondamentales et Appliquées, Université Toulouse 3). Systèmes de particules avec interactions de type jeux

2013 Co-supervision, with F. Gensbittel, of the memoir of Hugo Martin, L3 ENS Cachan Bretagne. M2 (pre-doctorate) level:


2009-2014: “Game Theory” Course, M2 TSE, UT1 Capitole: 27h then 36h from 2011. Direction of the research projects of Xiaoxi Li (repeated games with signals, 2010 now PhD Student at Paris 6), Nicolas Dupuis (congestion games, 2010), Stephen Wolff (modes of discounting in repeated games,


2006-2007 Direction of the project of P. Sudries (M2 Masef) “Croyances, apprentissage et équilibres dans les jeux répétés” (Beliefs, learning and equilibria in repeated games).

2002-2003 à 2005-2006: Course “Jeux et Contrats” (Games and contracts) in the DEA MMME (Modélisation et Méthodes Mathématiques en Economie, Paris I), with T. Tomala.


M1 Level:


2007-2009: Tutorials in Game Theory at Ecole Polytechnique, 9*2h, for the course by Sylvain Sorin. 3rd year student in the program “Ingénierie Mathématique de la Finance et des Systèmes Ecologiques”.

Spring 2008: Supervision of a second year project at ENPC (French Grande Ecole), on congestion games (around Braess’ s paradox).

Game Theory Course in M1 MASS (mathématiques appliquées aux sciences sociales, i.e. applied mathematics for social sciences) from 2001-2002 to 2006-2007 (Paris-Dauphine, 3*10 h then 3*13h in 2005-2006 and 2006-2007)). See above the written notes: Jeux sous forme stratégique.

Course “Game Theory and Applications to Industrial Organization”, from Octobre 29, to November 12 1999 at Birzeit University (Cisjordanie) at a level M1 MASS, part of a cooperation program between Birzeit University and the universities of Evry, Paris I, Paris VII and Paris IX. 6*3h.

Exercices in Game Theory in M1 Econométrie (Paris I, 2nd semester 95/96, 12x1h30), and at l’ENSAE (3rd year division SEA, 1er semester 95/96, 6x1h10).

Direction of 6 student projects in M1 MASS from 1999 to 2004.

L3 Level:

2012-2015: Course “Mathématiques de la décision”, (Decision mathematics, new course) L3 Eco-maths, 18*1h30, Ecole d’Economie de Toulouse, Université Toulouse 1 Capitole.

Other teaching in probability and statistics:


Teaching for Undergraduate:

2009-2012: In charge of the mathematics (linear algebra) course at semester 2 for 1st year students in economics and management at Université Toulouse 1 Capitole, 656 registered students in 2010. 33h or 36h course for 150 students (and 15h tutorials in 2010 only).


Course: Algèbre 1 for 1st year MASS students (from 2000-2001 to 2004-2005, 13*1h30, around 170 students). See above for the written notes.

Exercises in Analysis and Algebra (1rd year MASS, 98-99, and 2000-01 to 2004-2005, 32*4h30, and 2nd year MASS, 99-2000, 26x1h30). Mathematical reasoning (1st year MASS, 98-99, 13x1h30), Optimization (Paris I, 2nd year MASS, 97/98, 14x1h30), Analysis (1st year MASS, 97/98, 14x2h), mathematics for students in Economics (Paris I, 95/96 and 96/97, 12x1h30 per year).


5 Cursus

Habilitation conferred to research direction defended on November 27, 2007 at Université Paris-Dauphine. Title: “Autour des jeux répétés (optimisation et contrôle de processus dans les interactions dynamiques, et quelques problèmes combinatoires)”, i.e. “Around repeated games (optimization and control of stochastic processes in dynamic interactions, and a few combinatorial problems)”. Jury members: professors J. Abdou (Paris I), P. Cardaliaguet (Brest), F. Forgès (Paris-Dauphine), E. Jouini (Paris-Dauphine, coordinator), E. Lehrer (Tel-Aviv, referee), J.F. Mertens (Louvain-la-Neuve, referee), S. Sorin (Paris VI, referee) and N. Vieille (HEC).

May-June 2009: Ranked 1st on the professor position PR-0311382J-9002 at University Toulouse 1 (applied maths) and on the prof. position PR-0141408E-120 at Caen University (applied and pure maths, profile: discrete optimization, applied and pure maths). Ranked 2nd on the position PR-0751722P-3541 at Université Paris 6 (applied maths, profile: Graph Theory, Discrete Optimization, Combinatorics).

May-June 1999: Ranked first on the Maître de Conférences (assistant prof) position MCF-0751717J-0395 at Paris I University (applied maths), ranked 3rd on the position MCF-0750736T-0427 at Paris-Dauphine Université (applied maths).


6 Miscellaneous

- I was awarded the PEDR (“Prime d’Encadement Doctoral et de Recherche”) continuously since 2002 (renewed in 2006, 2010 under the name of PES, 2015).

- OVA (Outstanding Vitae Awards) from Toulouse School of Economics, 2010-

- I obtained the DODU price (ex-aequo with Jean Maeght) for the best presentation in the conference of the MODE group 1998.


- Responsible for the Baccalaureat maths examination, bac STG (Sciences et Technologies de la
Gestion) 2013.


- Advisor for the work experience of Pierre Brunello (Terminale), 16-18 october 2013 (discovery of research).

- Member of the National University Council (CNU, 26th section, 2005-2007). Participation in the qualification process for assistant professors, and in the promotion process for the “Hors-Classe” grade of assistant professors.

- Member of the mathematics selection committee of Paris-Dauphine, 2001-2008 (vice-president from 2004 to 2006). Also a member of the commissions of Paris I (2004-2006) and Limoges (2006-). Elected member of the council of Ceremade from 1999 à 2005. Member of the selection committee for an assistant professor position in applied maths at Paris-Dauphine in 2010, 2011 and 2012, for a professor position in applied maths (nonlinear analysis; optimization, control) in Brest in 2011, for an assistant professor position in pure and applied maths (optimization, game theory, control, effective algebra or number theory) in 2012 at University Paris 6. Member of the selection committees for 2 professor positions (Statistics, Econometrics and Statistics), University Toulouse 1, 2014.

- Member of the SMAI (French Applied Maths Society) since 1997, former member of the Game Theory Society, from 1999 to 2002 and of the SMF (French Maths) in 2008-2009.

- In charge, together with S. Roverato, of the DEUG MASS (1st and 2nd year students in applied maths and social sciences) at Université Paris-Dauphine from 2000 to 2003.

- Participation in the seminar Oiko NOMIA- Blaise Pascal (1996-2000, ENS Ulm, organized by G. Debreu), and in the Oiko NOMIA project, devoted to the study of mathematical models of social and economic interactions (Université Paris I). Redaction of game theory chapters.

- Participation in a scientific experience during the French presidential election 2007. Testing an alternative voting system, based on the median, introduced by M. Balinski and R. Laraki.

- Teaching coordinator of the PhD students Frédéric Sur and Romain Brette (2001-2003). Coordinator of the student Nora El Qadim, who was admitted to ENS Cachan in 2002. President of a Baccalaureat Jury in 2005 (session STL, Lycée Paul Eluard de St Denis).