Patrick Loiseau

Research Scientist at Inria (Saclay) — head of FairPlay team
Professor (part-time) at École Polytechnique (DIX)
Professor (part-time) at ENSAE — responsable for CS courses

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Research Interests

My research interests revolve around *game theory* and *statistical learning* and their interactions, in particular in the context of *security*, *privacy* and *ethics of online systems and algorithms*. I like to work on problems that have both fundamental theoretical aspects and important practical applications. My main current interests are in algorithmic fairness and transparency (in particular in online advertising); game theory for security and resource allocation (adversarial learning, Blotto games); learning and privacy; and interactions between game theory and learning (adversarial bandits, leaning in games, using the solution of games to analyze/design learning algorithms). I also worked on causal methods and applications to networking, cyberinsurance, scheduling and pricing in clouds and smart grids, large deviations and applications to networking and to medicine, long-range dependence and heavy-tails, and statistical estimation under sampling.

Education

Université Pierre et Marie Curie (Paris 6), Paris, France — Dec. 2016
Habilitation à diriger des recherches (HDR)
Thesis: *Combining game theory and statistical learning for security, privacy and network systems*
Committee: Eitan Altman (reviewer), Tamer Başar (reviewer), Gérard Biau, Rainer Böhme (reviewer), Bruno Gaujal, Refik Molva, Vianney Perchet

Université Pierre et Marie Curie (Paris 6) / École Polytechnique, Paris, France — July 2010
M.Sc. Degree in Mathematics – *Probability and random models*
First class honors: "mention très bien"
Thesis: *Large deviations for mixing processes*

École Normale Supérieure de Lyon, Lyon, France — Dec. 2009
Ph.D. in Computer Science, prepared at LIP lab., within the Inria RESO team
Thesis: *Contributions to the Analysis of Scaling Laws and Quality of Service in Networks: Experimental and Theoretical Aspects*
Advisors: Paulo Gonçalves, Pascale Vicat-Blanc Primet
Committee: Christophe Diot, Daniel Kofman, Jean-Yves Le Boudec (reviewer), Rudolf Riedi (reviewer), Philippe Robert (reviewer)

École Normale Supérieure de Lyon, Lyon, France — 2002 – 2006
"Elève normalien": undergraduate and graduate studies at the physics department

M.Sc. Degree in Physics – *Non linear and statistical physics* (July 2006)
Thesis: *Complex wavelets for the analysis of scaling phenomena*
Degree of Professeur-Agrégé in Physics (July 2005)
B.Sc. ("licence") Degree in Physics (July 2003)

Lycée Marcelin Berthelot, Saint-Maur des Fossés, France — 2000 – 2002
French preparatory classes with physics and chemistry majors (classes préparatoires PCSI and PC*)
Admission to École Normale Supérieure de Lyon

Employment

ENSAE, Palaiseau, France Sept. 2022 – present
Part-time Professor ("Chargé de Cours"), responsible for the CS courses at ENSAE

École Polytechnique, Palaiseau, France Sept. 2020 – present
Part-time Professor ("Professeur Chargé de Cours") in the CS department (DIX)

Inria, France Nov. 2018 – present
Research scientist (CRCN):
Head (with V. Perchet) of the FairPlay team in Saclay (since March. 2022)
(a joint team Inria, Criteo and ENSAE hosted at the CREST lab)
Member of the POLARIS team in Grenoble (a joint team Inria, LIG) (Nov. 2018 – Feb. 2022)

Co-holder (with M.-C. Rousset) of a Chair of **MIAI @ Grenoble Alpes** Sept. 2019 – Aug. 2023
Chair title: *Explainable and Responsible AI*

Univ. Grenoble Alpes, Grenoble, France Oct. 2017 – Oct. 2018
Holder of a Chair of Excellence IDEX UGA at the LIG lab., within the POLARIS team
Chair title: *HumanLearn: Human-aware learning in the digital society*

EURECOM, Sophia-Antipolis, France Nov. 2011 – Aug. 2017
Assistant Professor in the Data Science department (*first class* from July 2015)
(Previously in the former Networking and Security department until Jan. 2016)

University of California, Santa Cruz, CA, USA Dec. 2010 – Oct. 2011
Post-doctoral scholar in Basking Engineering school, working with Prof. John Musacchio
Research topic: *Game theory and application to network economics*

Inria Paris-Rocquencourt, Le Chesnay, France Jan. 2010 – Nov. 2010
Post-doctoral fellow in Sisyphe team, working with Julien Barral and Michel Sorine
Research topic: *Multi-scale analysis of heart-rate variability: estimation and control-theoretic modeling*

École Normale Supérieure de Lyon, Lyon, France Sept. 2006 – Dec. 2009
Doctoral fellow at LIP lab. in Inria RESO team, supervised by Paulo Gonçalves and Pascale Vicat-Blanc
Research topic: *Analysis and modeling of network traffic and performance: from theory to practice*

École Normale Supérieure de Lyon, Lyon, France Sept. 2002 – Aug. 2006
"Elève fonctionnaire stagiaire"

Visiting positions

Max Planck Institute for Software Systems, Saarbrücken, Germany April 2016 – Oct. 2018
Visiting researcher, hosted by Prof. Krishna Gummadi
Funded by a Humboldt Research Fellowship for experienced researchers

Max Planck Institute for Software Systems, Saarbrücken, Germany July 2014 – Sept. 2014
Visiting researcher, hosted by Prof. Krishna Gummadi

University of California, Berkeley, CA, USA July 2012 – Aug. 2012
Visiting researcher in the EECS department, hosted by Prof. Jean Walrand

University of California, Berkeley, CA, USA Dec. 2010 – Oct. 2011
Visiting member of the Network Economics Group, hosted by Prof. Jean Walrand

University of Waterloo, Waterloo, ON, Canada Oct. 2010
Visiting researcher in the ECE department, hosted by Prof. Ravi Mazumdar

Internships

École Normale Supérieure de Lyon, Lyon, France Apr. 2006 – July 2006
Research Intern in the Physics lab., supervised by Patrice Abry, Pierre Borgnat and Paulo Gonçalves
Research topic: *Complex wavelets for the analysis of scaling phenomena*

École Normale Supérieure de Lyon, Lyon, France May 2004 – July 2004
Research Intern in the Physics lab., supervised by P. Abry, P. Flandrin and E. Pereira de Souza Neto
Research topic: *Application of the Empirical Mode Decomposition to the study of the heart beat rate*

École Normale Supérieure de Lyon, Lyon, France June 2003 – July 2003
Research Intern in the Chemistry lab., supervised by Vincent Krakoviac
Research topic: *Numerical study of the pressure in a random porous matrix via Monte-Carlo simulations*

Teaching experience

ENSAE Paris, Palaiseau, France

Algorithm Design and Analysis Spring, Since 2023
Responsible of the teaching unit, lectures (18h), graduate level (Ingénieur 3A / MSc)

Projet de programmation Winter, Since 2023
Responsible of the teaching unit, lectures/labs (18h) and organization of a programming project in Python, coordination of a team of 5 teaching assistants, undergraduate level (Ingénieur 1A)

École Polytechnique, Palaiseau, France

INF421: Design and Analysis of Algorithms Winter, Since 2020
Petites classes (TD, 40h) and Projet Informatique (proposition and evaluation of a coding project for ∼15 groups of students), undergraduate level (Ingénieur 2A, responsible: Benjamin Doerr)

INF581: Advanced Machine Learning and Autonomous Agents Winter, Since 2020
Labs (TP, 12-16h) and lectures (2-4h), graduate level (Ingénieur 3A / M1, responsible: Jesse Read)

Univ. Grenoble Alpes, Grenoble, France

Introduction to Data Analysis Spring 2020
Co-responsible of the teaching unit (with Eric Gaussier and Oana Goga), lectures (12h) and labs (TP, 9h), graduate level (M1 MOSIG)

INFO4: Probabilité et Simulation ("Probability and Simulation") Fall 2019
Lectures (6h) and labs (TD, 12h), graduate level (M1, responsible: Arnaud Legrand)

Algorithmes pour le traitement des données ("Algorithms for data processing") Fall 2019
Lectures (3h) and labs (TP, 12h), graduate level (M1, responsible: Eric Gaussier)

Inf202: Modélisation des structures informatiques: aspects formels ("Formal aspects of computer structures") Spring 2018
Responsible for the teaching unit, lectures (15h) and tutorials (TD, 30h), coordination of a team of 6 teaching assistants, undergraduate level (L1)

EURECOM, Sophia-Antipolis, France

Statistical data analysis Fall 2013–16
Instructor, graduate course (short: 21 hours/year)

Game Theory Fall 2013–16
Instructor, graduate course (short: 21 hours/year)

Network Economics Fall 2012–16
Instructor, graduate course (short: 21 hours/year)

Performance Evaluation of Computer Systems Spring 2012 and 2013
Instructor, graduate course (long: 42 hours/year)

University of California, Santa Cruz, CA, USA

ISM207: *Random Process Models in Engineering* Spring 2011
Guest lecturer (3 hours), graduate course (instructor: Prof. Musacchio), TIM program

École Normale Supérieure de Lyon, Lyon, France

Network traffic models Spring 2010
Guest lecturer (4 hours), M2 graduate course (instructors: C. Touati and P. Gonçalves), CS department

Université de Versailles Saint-Quentin-en-Yvelines, Versailles, France

Introduction to probability Fall 2010
Tutorials (36 hours), L2 undergraduate level (instructor: A. Rouault), Mathematics department

École Normale Supérieure de Lyon, Lyon, France
Teaching assistant ("moniteur") in the physics and CS departments (64 hours/year) 2006 – 2009

Electromagnetic waves and telecommunications
Tutorials, graduate level (preparatory class to "agrégation" in physics)

Introduction to signal processing
Lab. sessions, bachelor level (L3), physics program

Principles of hydrodynamics, linear acoustics and shock waves
Tutorials, graduate level (preparatory class to "agrégation" in physics)

Computer architecture, systems and networks
Tutorials, bachelor level (L3), fundamental CS program

MediPlus Lyon, Lyon, France
Part-time teaching for first year medicine and pharmacy students (total 196 hours) 2006 – 2009

Basics of physics and biophysics
Lectures and tutorials, medicine program

Basics of general mathematics and statistics
Lectures and tutorials, pharmacy program

Professional service, scientific responsibilities and leadership

Teaching and internal responsibilities

Responsible for the computer science courses at ENSAE (since 2022)

Responsible for scientific monitoring of the ATOS-Inria collaboration around Grenoble (2020-21)

Responsible for the networking track of the engineering studies at EURECOM (2014-17)

Member of the restricted committee for reflection on EURECOM's long-term strategy (2014-16)

Steering committees

Chair of the steering committee of NetEcon (2013-21)

Creator and chair of the steering committee of Sophia-networking (2013-17)

Member of the scientific council of the Labex UCN@Sophia (2015-17)

Member of the steering committee of the "réseau thématique 2 (architecture et gestion)" of Institut Mines-Telecom (2014-17)

Conference organization

Workshop chair of ACM SIGMETRICS 2021

Creator and lead organizer of the UCN@Sophia Labex seminar (a bimonthly seminar, 2013-17)

Member of the scientific programme committee of the BMW summer school 2017

Registration chair of ACM SIGMETRICS 2016

Co-organizer, seminar on modeling, optimization and control in wireless networks, Paris 2015

PC co-chair of NetEcon 2015 (with Aaron Roth and Adam Wierman)

PC co-chair of W-PIN+NetEcon 2014 (with John Chuang)

PC co-chair of W-PIN+NetEcon 2013 (with David Parkes and Jean Walrand)

Registration chair of ACM SIGMETRICS 2013

PC co-chair of W-PIN 2012 (with Jean Walrand)

Editorial activities

Associate editor, IEEE TBD (2018-21)

Associate editor, ACM TOIT (2015-21)

Guest editor, ACM TOIT special issue on economics of security and privacy (2016)

Guest editor, ACM TOIT special issue on pricing and incentives in networks and systems (2013)

TPCs

2023: NeurIPS, EWAF (Area Chair), The Web Conf

2022: ICML, ECML-PKDD (Area Chair), The Web Conf, DE

2021: AAAI, FAccT (Area Chair), ECML-PKDD (Area Chair), NetEcon

2020: NeurIPS, ICML, AAAI, IJCAI, PETS, NetEcon

2019: NeurIPS, ICML, SIGMETRICS, PETS, NetEcon

2018: NeurIPS, ICML, NetEcon, NetGCoop, WiOpt, GameNets

2017: NIPS, NetEcon, WiOpt (member of the Advisory TPC), ICPP, ICQT

2016: WWW (demo track), FC, ITC, NetGCooP, SDP

2015: WWW (demo track), SDP

2014: SIGMETRICS, NetGCooP, SDP

2013: W-PIN+NetEcon, SDP, ICQT

2012: GameSec, W-PIN

2009: CFIP (shadow)

Invited referee for journals and conferences (each listed only once)

Journal of Machine Learning Research, Mathematics of Operation Research, Games and Economics Behavior, Communications of the ACM, Dynamic Games and Applications, Lato Sensu : Revue de la Société de philosophie des sciences, IEEE Open Journal of the Communications Society, Statistics and Probability Letters, Ethics and Information Technology, CDC 2019, WINE 2018, WWW 2018, IEEE Transactions on Signal Processing, ACM Transactions on Privacy and Security, IEEE Transactions on Information Forensics and Security, ACM Transactions on the Web, IEEE Networks, IEEE Transactions on Dependable and Secure Computing, ACM Transactions on Information and

System Security, Operation Research, IEEE/ACM Transactions on Networking, International Journal of Information Security, ISAAC 2015, IEEE INFOCOM 2013, Computer Communications journal, IEEE Transactions on Communications, Computer Networks Journal, IEEE Communication Letters, Stochastic Models, ACM SigComm CCR, 20th ITC Specialist Seminar on Network Virtualization - Concepts and Performance, CFIP 2009

Recruitment committees

CoS MCF (Assist. Professor) Univ. Grenoble Alpes (2021)

Evaluation of PhD dissertations

Member of PhD committees: Anthony Bardou (Univ. Lyon, 2023)—reviewer; Virginie Do (Univ. Paris Dauphine, 2023)—reviewer; Vincent Grari (Sorbonne Université, 2022)—reviewer; Antoine Rault (Inria Rennes, 2016); Áron Lászka (Budapest University of Technology and Economics, 2014)—reviewer

Member of individual PhD monitoring committees (CSI): Carlos Pinzòn (Inria Saclay, 2022); Omar Boufous (Université d'Avignon, 2021)

Member of the mid-term evaluation committee for 7 PhD students at EURECOM (2013-17)

Panel member for grant proposal selection

External expert for the evaluation of startups to enter in incubator Agoranov (2022)

Expert for the F.R.S.-FNRS, Belgium (regularly since 2016)

Expert for the Czech Science Foundation (2020)

Member of the selection committee for the "Future & Ruptures" program from IMT (2014)

External reviewer for the Informatics and Mathematics Panel of the Academic Research Council, Ministry of Education, Singapore (2014)

Miscellaneous scientific evaluation tasks

Member of the working group for the creation of the Inria team NEO

Honors and awards

Runner-up for the 2019 CNIL-Inria Award for Privacy Protection 2019
(for paper [48] by A. Andreou, G. Venkatadri, O. Goga, K. Gummadi, P. Loiseau and A. Mislove)

Runner-up for Caspar Bowden Award for Outstanding Research in Privacy Enhancing Technologies 2019
(for paper [46] by G. Venkatadri, A. Andreou, Y. Liu, A. Mislove, K. Gummadi, P. Loiseau and O. Goga)

"Prime d'encadrement doctoral et de recherche (PEDR)" (Inria) 2019-2022

Best Paper Award nominee at FAT* 2018
(for paper [47] by T. Speicher, M. Ali, G. Venkatadri, F. Nunes Ribeiro, G. Arvanitakis, F. Benevenuto, K. P. Gummadi, P. Loiseau, and A. Mislove)

Best Paper Award Runner-up at IEEE/ACM ASONAM 2017
(for paper [50] by A. Andreou, O. Goga, and P. Loiseau)

ANR Tremplin-ERC grant 2016
(Award for researchers who were well evaluated at the second stage of ERC but did not obtain funding)

Humboldt Research Fellowship for experienced researchers (Alexander von Humboldt Foundation) 2016
(Highly competitive; maximum initial award of 18 months, extended in the context of parental support)

Data Transparency lab research grant (top 11% of the projects) 2016
(for a project as co-PI with Oana Goga)

Symantec research faculty gift 2015

Data Transparency lab travel grant (top 30% of the projects) 2015
(for a project as co-PI with Oana Goga)

Best Paper Award Runner-up at IFIP Performance 2010
(for paper [64] by P. Loiseau, P. Gonçalves, J. Barral, and P. Vicat-Blanc Primet)

ERCIM Alain Bensoussan European Post-doctoral fellowship (declined) 2010

Best Student Demonstration Award at ACM SIGMETRICS/Performance 2009
(for demo [82] by P. Loiseau, R. Guillier, O. Goga, M. Imbert, P. Gonçalves, and P. Vicat-Blanc Primet)

PhD fellowship and teaching assistanship from École Normale Supérieure de Lyon 2006

Advising experience

Postdocs

Present:

Simon Finster (Since Nov. 2022, co-advised with Bary Pradelski)

Felipe Garrido Lucero (Since Oct. 2022, co-advised with Vianney Perchet)

Past:

George Arvanitakis (Jan.–Oct. 2018, now researcher at Huawei Paris lab.)
Topic: Learning and game theory; Output: [40]

Michela Chessa (Sept. 2013–Aug. 2015, now Assist. Prof at Université Côte d'Azur, GREDEG)
Topic: Game theory and economics of personal data; Output: [1, 4, 55, 56, 67, 77, 78, 80]

PhD students

Present:

Mathieu Molina (Since Jan. 2022, co-advised with Vianney Perchet from ENSAE, CREST and Nicolas Gast from Inria Grenoble)
PhD Univ. Paris Saclay in progress
Topic: Fairness in ad auctions; Output: [24, 27]

Remi Castera (Since Oct. 2021, co-advised with Bary Pradelski from CNRS, LIG)
PhD Univ. Grenoble Alpes in progress
Topic: Fairness in matching; Output: [29]

Past:

Till Kletti (Since Feb. 2020, co-advised with Sihem Amer-Yahia from CNRS, LIG, Cifre PhD with Naver Labs, industrial advisor: Jean-Michel Renders, now patent officer at the EC)
PhD Univ. Grenoble Alpes successfully defended on June 29, 2023; manuscript here
Topic: Fairness in multi-sided platforms; PhD output: [30, 32]

Vitalii Emelianov (Sept. 2018–June 2022, PhD Univ. Grenoble Alpes, co-advised with Nicolas Gast from Inria Grenoble, now postdoc at Inria Lille)
PhD Univ. Grenoble Alpes successfully defended on June 13, 2022; manuscript here
Topic: Fairness in selection problems; PhD output: [8, 28, 36, 40]

Eleni Gkiouzepi (Dec. 2019–Nov. 2021, now PhD student at TU Berlin)
Topic: Transparency in online ad platforms; Output: [26]

Benjamin Roussillon (Oct. 2018–Sept 2021, PhD Univ. Grenoble Alpes, co-advised with Panayotis Mertikopoulos from CNRS, LIG, now teacher)
PhD Univ. Grenoble Alpes successfully defended on Sept 15, 2021; manuscript here
Topic: Learning in the presence of strategic data; PhD output: [9, 31, 34]

Dong Quan Vu (Jan. 2017–June 2020, PhD UPMC, Cifre with Nokia Bell Labs, industrial advisor: Alonso Silva, now researcher at Safran)
PhD UPMC successfully defended on June 25, 2020; manuscript here
Topic: Approximate equilibrium and learning in Blotto games; PhD output: [3, 35, 37, 39, 44, 45]

Athanasios Andreou (Oct. 2015–June 2019, PhD UPMC, co-advised with Oana Goga from CNRS, LIG, postdoc at LIG, now postdoc at NYU after a break as independent consultant)
PhD UPMC successfully defended on June 17, 2019; manuscript here
Topic: Transparency to Social Media Advertising; PhD output: [50] (best paper award runner-up), [48] (runner-up for CNIL-Inria privacy award), [46] (runner-up for Caspar Bowden PET award), [41]

Xiaohu Wu (Nov. 2012–Feb. 2016, PhD Telecom ParisTech, postdoc at Aalto University, now researcher at BUPT)
PhD Telecom ParisTech successfully defended on Feb. 16, 2016; manuscript here
Topic: Scheduling and Pricing in Cloud Computing; PhD output: [5, 6, 10, 49, 52]

Hadrien Hours (Nov. 2011–Sep. 2015, PhD Telecom ParisTech, co-advised with Ernst Biersack, postdoc at ENS Lyon, now senior data scientist at Spotify)
PhD Telecom ParisTech successfully defended on Sept 16, 2016; manuscript here
Topic: A causal approach to the study of telecommunication networks; PhD output: [14, 15, 54, 68, 69]

Amine Lahouel (Sept. 2016–Nov. 2018, Cifre with SAP, industrial advisor: Michele Bezzi, now Senior Software Engineer at Qwant)
Topic: Data anonymity / utility tradeoff in big data applications

Alberto Benegiamo (Nov. 2013–Aug. 2015, co-advised with Giovanni Neglia from Inria, now Software and System Developer - Derivatives Markets at London Stock Exchange Group)
Topic: Mathematical tools for smart grids; Output: [11, 51]

Interns

Past:

Sruthi Gorantla (PhD student at IISc, intern at CREST in June-Aug 2023)

Reda Jalal (M2 student at CentralSupelec/Univ. Paris Saclay, intern at CREST in June-Nov 2023)

Nicolas Noldus (L3 student at ENSAE/ENS Paris, intern at CREST in June-July 2023)

Mathieu Molina (M2 student at Mines ParisTech/PSL, intern at LIG in May-Oct 2021)

Remi Castera (M2 student at Ecole Polytechnique/Univ. Paris Saclay, intern at LIG in April-Aug 2021)

Jeremy Guerin (M2 student at Univ. Paris Saclay, intern at LIG in April-Sept 2021, co-advised with Nicolas Gast)

Aurélien Gaufre (M2 student at Univ. Grenoble Alpes, intern at LIG in Feb-July 2021, co-advised with Nicolas Gast)

Krishna Virendra Acharya (M2 student at ENS Lyon, intern at LIG in Feb-July 2020, co-advised with Nicolas Gast)

Nicolas Rocher (M2 student at ENS Lyon, intern at LIG in April-July 2019 and Sept 2019-Jan 2020)

Chen Yan (M2 student at UPMC, intern at LIG in Feb.-July 2019, co-advised with Nicolas Gast)

Etienne Vareille (L3 student at ENS Lyon, intern at LIG in June-July 2018, co-advised with Nicolas Gast)

Nicolas Charpenay (M1 student at ENS Paris Saclay, intern at LIG in April-Aug. 2018)

Eman Al-Shaour (M1 student at Univ. Grenoble Alpes, intern at LIG in March.-July 2018, co-advised with George Arvanitakis)

Benjamin Roussillon (M2 student at ENSIMAG, intern at LIG in Feb.-July 2018)
Output: Co-laureate of the best MSc thesis award in OR (Prix du mémoire de Master en RO/AD) from ROADEF

Vitalii Emelianov (M2 student at Univ. Grenoble Alpes, intern at LIG in Feb.-July 2018)

Sarath A. Y. (PhD student at IISC, intern at LIG in Feb.-July 2018)
Output: [38]

George Arvanitakis (PhD student at EURECOM, intern at MPI-SWS in June-Dec. 2017, now postdoc at LIG)
Output: [47]

Stéphane Pouget (L3 student at ENS Lyon, intern at MPI-SWS in June-July 2017)

Yannick Terme (Eng. EURECOM/Telecom ParisTech, intern at MPI-SWS in July-August 2016, now student at ENSAE)

Nina Grgić-Hlača (M.A. University of Zagreb, intern at EURECOM in Feb.-July 2016 with an ERASMUS+ grant, now PhD student at MPI-SWS)

Vijay Kamble (Ph.D. UC Berleley, intern at EURECOM in April-May 2015, postdoc at Stanford, now assistant Professor at UIC)
Output: [7, 79]

Athanasios Andreou (M.Sc. EURECOM, intern at MPI-SWS in Feb.-Sept. 2015, co-advised with Oana Goga and Krishna Gummadi, now Ph.D. student at EURECOM)
Output: initial work on [50], won a grant "thèse d'excellence" from institut Mines-Telecom to do a PhD at EURECOM

Yifan Pi (B.Sc. Tsinghua University, intern at EURECOM during summer 2013, now software engineer at Google)

Student projects

Supervision of 14 "semester projects" of Master students at EURECOM in 2012-17

Research funding

PEPR IA Projet Cible 2023 – 2027
FOUNDRY: FOUNDations of Robustness and reliabilitY in AI (€ 910k for FairPlay)
Patrick Loiseau (PI for FairPlay and contact point for the Inria partners)

ANR JCJC grant 2021 – 2025
FairPlay: Fair algorithms via game theory and sequential learning (€ 245k)
Patrick Loiseau (PI)

Cifre contract with Naver labs 2020 – 2023
Fairness in multi-stakeholder recommendation platforms (€ 75k + support of one PhD student)
Patrick Loiseau (co-PI), Sihem Amer-Yahia (co-PI), Jean-Michel Renders (co-PI at Naver labs)

ANR-NRF France-Singapore PRC grant 2019 – 2023
ALIAS: Adaptive learning for interacting agents and systems (€ 279k for french side)
Bary Pradelski (PI), Patrick Loiseau (member), Panayotis Mertikopoulos (member)

MIAI @ Grenoble Alpes, Chair 2019 – 2023
Explainable and Responsible AI (€ 365k)
Patrick Loiseau (co-PI), Marie-Christine Rousset (co-PI)

Grenoble INP Presidence, doctoral support grant 2019 – 2022
D-TEAM: Dynamic Theory and Experiments for Assignment Markets (€ 50k)
Patrick Loiseau (PI), Bary Pradelski (co-PI), Heinrich Nax (co-PI at Univ of Zurich)

IDEX UGA IRS 2018 – 2021
AdvLearn: Classification in the presence of adversarial data: models and solutions (€ 50k)
Patrick Loiseau (PI), Panayotis Mertikopoulos (co-PI)

DGA, doctoral grant 2018 – 2021
Classification en présence de données adverses : modèles et solutions (€ 59k)
Patrick Loiseau (PI), Panayotis Mertikopoulos (co-PI)

ANR Tremplin-ERC 2017 – 2019
CONNECTED: Towards secure and private personal-data-based online services in the networked world (€ 150k)
Patrick Loiseau (PI)

Cifre contract with Nokia Bell Labs 2016 – 2019
Learning in Blotto Games and Applications to Modeling Attention in Social Networks (€ 45k + support of one PhD student)
Patrick Loiseau (co-PI), Alonso Silva (co-PI at Nokia Bell Labs)

Cifre contract with SAP Research 2016 – 2019
Approche de l'anonymisation des données en fonction du niveau de risque associé (€ 45k + support of one PhD student)
Patrick Loiseau (co-PI), Michele Bezzi (co-PI at SAP Research)

Data Transparency lab research grant 2016 – 2017
TranspAd: A Collaborative Tool to Bring Transparency to Targeted Advertising (€ 50k)
Patrick Loiseau (co-PI), Oana Goga (co-PI)

Institut Mines-Telecom Futur&Ruptures program, doctoral support grant 2015 – 2018
TRANSPA: Bringing transparency to personalized services through statistical inference (€ 108k)
Patrick Loiseau (PI)

France-Berkeley fund 2014 – 2016
Multi-armed bandit games and applications ($ 10k)
Patrick Loiseau (PI), Jean Walrand (PI)

Symantec research faculty gift 2015
Cyber insurance ($ 30k)
Patrick Loiseau (PI)

Institut Mines-Telecom Futur&Ruptures program, post-doctoral support grant 2015
MONET: MONETization of personal data in social networks: A game-theoretic approach (€ 30k)
Patrick Loiseau (PI)

Labex UCN@Sophia, post-doctoral support grant 2013 – 2015
PRIMO: PRIvate data MOnetization: a public good approach using cooperative game theory (€ 90k)
Patrick Loiseau (PI)

Labex UCN@Sophia, doctoral support grant 2013 – 2016
Mathematical tools for the smart grid (€ 105k)
Patrick Loiseau (co-PI), Giovanni Neglia (co-PI)

Institut Mines-Telecom Futur&Ruptures program, doctoral support grant 2012 – 2015
Robust pricing of cloud resources through mean-field games (€ 121k)
Patrick Loiseau (PI)

Publications

My publications are available at `http://lig-membres.imag.fr/loiseapa/publications.html`.
Link to Google Scholar profile: `https://scholar.google.fr/citations?user=q98gB0AAAAAJ&hl=en`.

Preprints
(Excluding papers submitted to conferences with anonymous submissions.)

[1] Michela Chessa and **Patrick Loiseau**. Enhancing voluntary contribution in a public goods economy via a minimum individual contribution level, 2023. (Preprint available at `https://ideas.repec.org/p/gre/wpaper/2017-24.html`).

[2] Mohamed Alzayat, Johnnatan Messias, Balakrishnan Chandrasekaran, Krishna P. Gummadi, and **Patrick Loiseau**. Modeling Coordinated vs. P2P Mining: An Analysis of Inefficiency and Inequality in Proof-of-Work Blockchains, 2021. (Preprint available at `https://arxiv.org/abs/2106.02970`).

[3] Dong Quan Vu, **Patrick Loiseau**, and Alonso Silva. Approximate equilibria in non-constant-sum colonel blotto and lottery blotto games with large numbers of battlefields, 2020. (Preprint available at `https://arxiv.org/abs/1910.06559`).

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Software Demonstrations

[82] **Patrick Loiseau**, Romaric Guillier, Oana Goga, Matthieu Imbert, Paulo Gonçalves, and Pascale Vicat-Blanc Primet. Automated traffic measurements and analysis in Grid5000, June 2009. ACM SIGMETRICS / Performance demonstration contest (**Best Student Demonstration Award**).

Edited volumes

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Dissertations

[89] **Patrick Loiseau**. *Combining game theory and statistical learning for security, privacy and network systems*. HDR thesis, UPMC, December 2016.

[90] **Patrick Loiseau**. *Contributions to the Analysis of Scaling Laws and Quality of Service in Networks: Experimental and Theoretical Aspects*. PhD thesis, ENS Lyon, December 2009.

Software

AdAnalyst: A Chrome and Firefox extension that provides aggregate statistics and various insights and visualizations about the ads a user receives on Facebook.
Available at `http://adanalyst.mpi-sws.org/`.

Invited talks / Keynotes / Guest lectures

Ethics of Public Robots and AI (EPURAI) workshop, Paris — November 2023

European Meeting of Statisticians (EMS), Poland — July 2023

Data Science seminar, London School of Economics, UK — March 2023

Workshop @ Comete on Ethical AI, Palaiseau, France — November 2022

Atelier pluridisciplinaire sur la justice sociale, Cachan, France — November 2021
On fair selection in the presence of implicit and differential variance

RAWNET workshop (in colocation with WiOpt), Avignon, France — June 2019
Learning in Colonel Blotto games

DS3 Data Science Summer School, Paris, France — June 2018
Transparency, fairness, and privacy challenges in social media targeted advertising

Workshop Data Science in the Alps, Grenoble, France — March 2018
Transparency, Fairness, and Privacy challenges with targeted advertising in social medias

Columbia University (CS seminar), New-York, NY, USA — February 2018
Transparency, Fairness, and Privacy challenges with targeted advertising in social medias

Journée du pôle MSTIC de l'UGA (plenary talk), Grenoble, France December 2017
Human-aware learning for the digital society: a game-theoretic perspective

Privaski, Corrençon-en-Vercors, France March 2017
Learning from personal data provided by privacy-conscious users: a game-theoretic approach

ENS Lyon (SIESTE seminar), Lyon, France October 2016
Learning from strategic data: a game-theoretic perspective

MPI-SWS, Saarbrücken, Germany April 2016
Classification from strategic data: a game-theoretic perspective

11ème Atelier en Evaluation de Performances (keynote), Toulouse, France March 2016
Strategic resource allocation in adversarial environments

Harvard University (EconCS seminar), Cambridge, MA, USA November 2015
Classification from strategic data: a game-theoretic perspective

MIT (Special Henry L. Pierce laboratory seminar), Cambridge, MA, USA November 2015
Classification from strategic data: a game-theoretic perspective

Northeastern University (ECE department seminar), Boston, MA, USA November 2015
Classification from strategic data: a game-theoretic perspective

MIT Media Lab (Data Transparency Lab conference), Cambridge, MA, USA November 2015
Bringing Transparency to Targeted Advertising

LRI, Université Paris-Sud (Séminaire d'algorithmique et de complexité du plateau de Saclay), Saclay, France October 2015
Learning to classify from strategic data

UCLA, IPAM Graduate Summer School: Games and Contracts for Cyber-Physical Security (invited lecture), Los Angeles, CA, USA July 2015
Learning with Strategic Agents: From Adversarial Learning to Game-Theoretic Statistics

Inria Grenoble (In'tech seminar), Grenoble, France June 2015
On the impact of game theory in security

ACM SIGMETRICS (invited tutorial), Portland, OR, USA June 2015
Learning with Strategic Agents: From Adversarial Learning to Game-Theoretic Statistics

LINCS (LINCS seminar), Paris, France March 2015
Game-theoretic statistics: Learning from data generated by strategic agents

Institut Henri Poincaré (Paris game theory seminar), Paris, France March 2015
Game-theoretic statistics: Learning from data generated by strategic agents

Data transparency lab (DTL) kickoff workshop, Telefonica, Barcelona, Spain November 2014
Game theory and statistics for data transparency: 3 directions

AlgoGT, Saint Nizier du Moucherotte, France July 2013
Classification games

Campus SophiaTech (SophiaTech networks seminar), Sophia-Antipolis, France April 2013
A Robust Incentive Mechanism for Congestion Management

Mines ParisTech (Séminaire du CMA), Sophia-Antipolis, France March 2013
Incentive Mechanisms for Decongestion: Fixed-Budget Rebate versus Time-of-Day Pricing

UC Berkeley (TRUST seminar), Berkeley, USA — August 2012
Incentive mechanisms for congestion management

RESCOM summer school (invited lecture), Vittel, France — June 2012
Game theory for network security and privacy

Supélec, Gif-sur-Yvette, France — February 2012
Large games for Internet congestion management

INRIA Paris-Rocquencourt (RAP seminar), Le Chesnay, France — February 2012
Large games for Internet congestion management

UCLA (EE department), Los Angeles, CA, USA — October 2011
Raffle-based Incentive Schemes for Congestion Management

Caltech (RSRG Seminars), Pasadena, CA, USA — October 2011
Raffle-based Incentive Schemes for Congestion Management

Orange Labs (France Telecom), Sophia-Antipolis, France — March 2011
TCP traffic modeling using an almost-sure large-deviations result

University of Nice, Laboratoire J.A. Dieudonné (Séminaire de Probabilités et Statistiques), Nice, France
Principe de grandes déviations presque-sur et applications — March 2011

Alcatel-Lucent Bell Laboratories (Mathematics of Networks and Communications Research Department), Murray Hill, NJ, USA — March 2011
Almost-sure large deviations and application to TCP traffic

University of Waterloo (Department of Electrical and Computer Engineering invited seminar), Waterloo, Canada
Large deviations and application to fine TCP modeling — October 2010

UC Berkeley (Networking, Communications and DSP seminars), Berkeley, CA, USA — September 2010
Large deviations and application to fine TCP modeling

Caltech (RSRG Seminars), Pasadena, CA, USA — September 2010
Large deviations and application to fine TCP modeling

Politecnico di Torino (Telecommunication Network Group), Torino, Italy — May 2010
Heavy-tails and correlations in network traffic

INRIA Paris-Rocquencourt (RAP seminar), Le Chesnay, France — November 2009
Large deviations and application to TCP performance

Dissemination of scientific knowledge

Articles

Oana Goga and Patrick Loiseau. *Publicité en Ligne : reprenons la main !* Dissemination article co-published by the blog Binaire (Le Monde) and The Conversation France, June 3, 2019.

Conferences

Algorithmes et société: transparence de la publicité en ligne. Mini-conférence grand public, Festival Transfo, Grenoble, France, January 2018.

Misc

Participation in a debate "C'est pas moi, c'est l'IA", Biennale Arts-Sciences EXPERIMENTA, February 2020.

Organization of a workshop *IA, éthique et société*, Forum Ecobiz Grenoble, October 2019.

Participation in a debate *Ethique et numérique : quels enjeux sociétaux ?*. Festival Transfo, Grenoble, France, January 2019.

Press coverage

Tout ce que Facebook sait de moi (et de vous), Le Figaro, April 10, 2018.

"Why am I seeing this ad" explanations on Facebook are incomplete and misleading, a study says, Quartz, April 06, 2018.

Does Facebook's Ad Tool Mislead Voters? Bloomberg Businessweek, March 26, 2018.

To understand digital advertising, study its algorithms. The Economist, March 22, 2018.

'It might work too well': the dark art of political advertising online. The Guardian, March 19, 2018.

Is Facebook being honest with you about how it targets ads? Australian Broadcasting Corporation, March 18, 2018.

We still have no idea what really happens on Facebook. The Verge, March 15, 2018.

Researchers Discovered Data Leak In Facebook's Ad Software. Fast Company, March 6, 2018.

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