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

Address: CREST

91120 Palaiseau

Email: patrick.loiseau@inria.fr

France Web: https://patrickloiseau.github.io/

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

Spring 2018

("Formal aspects of computer structures")

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 Instructor, graduate course (long: 42 hours/year) Spring 2012 and 2013

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

PC chair of the Hi! PARIS summer school "AI & Data for Science, Business and Society" (with Shirish Srivastava)

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

2024: NeurIPS, ECML-PKDD (Area Chair)

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, Operation Research letters, 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 (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:

Denis Sokolov (Since Dec. 2023)

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: [3, 4, 55, 56, 67, 77, 78, 80]

PhD students

Present:

Reda Jalal (Since Feb. 2024)

PhD Univ. Paris Saclay in progress

Topic: Fairness in repeated decision-making problems

Mélissa Tamine (Since Jan. 2024, Cifre PhD with Criteo, industrial advisor: Maxime Vono)

PhD Univ. Paris Saclay in progress

Topic: Data sharing incentives at large scale

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, 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, 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, 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: [2, 35, 37, 39, 44, 45]

Athanasios Andreou (Oct. 2015–June 2019, 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

<u>Topic</u>: Transparency to Social Media Advertising; <u>PhD output</u>: [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, 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: [5,7,10,49,52]

Hadrien Hours (Nov. 2011–Sep. 2015, 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 ERAS-MUS+ 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: [6, 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 - 2025FairPlay: Fair algorithms via game theory and sequential learning ($\leq 245k$) Patrick Loiseau (PI) Cifre contract with Naver labs 2020 - 2023Fairness 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 - 2023ALIAS: Adaptive learning for interacting agents and systems (≤ 279 k for french side) Bary Pradelski (PI), Patrick Loiseau (member), Panayotis Mertikopoulos (member) MIAI @ Grenoble Alpes, Chair 2019 - 2023Explainable and Responsible AI (€ 365k) Patrick Loiseau (co-PI), Marie-Christine Rousset (co-PI) Grenoble INP Presidence, doctoral support grant 2019 - 2022D-TEAM: Dynamic Theory and Experiments for Assignment Markets (≤ 50 k) Patrick Loiseau (PI), Bary Pradelski (co-PI), Heinrich Nax (co-PI at Univ of Zurich) **IDEX UGA IRS** 2018 - 2021AdvLearn: Classification in the presence of adversarial data: models and solutions (≤ 50 k) Patrick Loiseau (PI), Panavotis Mertikopoulos (co-PI) **DGA**, doctoral grant 2018 - 2021Classification en présence de données adverses : modèles et solutions (€ 59k) Patrick Loiseau (PI), Panayotis Mertikopoulos (co-PI) ANR Tremplin-ERC 2017 - 2019CONNECTED: Towards secure and private personal-data-based online services in the networked world (€ 150k) Patrick Loiseau (PI) 2016 - 2019Cifre contract with Nokia Bell Labs 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 - 2019Approche 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 - 2017TranspAd: 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 - 2018TRANSPA: Bringing transparency to personalized services through statistical inference (≤ 108 k) Patrick Loiseau (PI) France-Berkeley fund 2014 - 2016Multi-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)

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Publications

My publications are available at https://patrickloiseau.github.io/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] 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).
- [2] 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).
- [3] Michela Chessa and Patrick Loiseau. A cooperative game-theoretic approach to quantify the value of personal data in networks, 2018. (Preprint available at https://ideas.repec.org/p/gre/wpaper/2018-02.html).

Articles in journals

- [4] Michela Chessa and **Patrick Loiseau**. Enhancing voluntary contributions in a public goods economy via a minimum individual contribution level. *Public Choice*, 2024. (To appear.).
- [5] Xiaohu Wu and **Patrick Loiseau**. Algorithms for scheduling deadline-sensitive malleable tasks. *Operations Research Forum*, 5(30), 2024.
- [6] Vijay Kamble, **Patrick Loiseau**, and Jean Walrand. An approximate dynamic programming approach to adversarial online learning. *Operations Research*, 72(1):373–388, 2024.
- [7] Xiaohu Wu and **Patrick Loiseau**. Efficient approximation algorithms for scheduling moldable tasks. *European Journal of Operations Research*, 310(1):71–83, October 2023.
- [8] Vitalii Emelianov, Nicolas Gast, Krishna P. Gummadi, and **Patrick Loiseau**. On fair selection in the presence of implicit and differential variance. *Artificial Intelligence*, 302:103609, January 2022.
- [9] Nicolas Gast, Stratis Ioannidis, Patrick Loiseau, and Benjamin Roussillon. Linear regression from strategic data sources. ACM Transactions on Economics and Computation, 8(2):10:1–10:24, May 2020.
- [10] Xiaohu Wu, **Patrick Loiseau**, and Esa Hyytia. Towards designing cost-optimal policies to utilize iaas clouds with online learning. *IEEE Transactions on Parallel and Distributed Systems*, 31(3):501–514, March 2020.

[11] Alberto Benegiamo, **Patrick Loiseau**, and Giovanni Neglia. Dissecting demand response mechanisms: The role of consumption forecasts and personalized offers. *Sustainable Energy, Grids and Networks*, 16:156–166, December 2018.

- [12] Lemonia Dritsoula, **Patrick Loiseau**, and John Musacchio. A game-theoretic analysis of adversarial classification. *IEEE Transactions on Information Forensics and Security*, 12(12):3094–3109, December 2017.
- [13] Raimo Kantola, Hammad Kabir, and **Patrick Loiseau**. Cooperation and End-to-End in the Internet. *International Journal of Communication Systems*, 30(12):e3268, August 2017.
- [14] Hadrien Hours, Ernst Biersack, Patrick Loiseau, Alessandro Finamore, and Marco Mellia. A Study of the Impact of DNS Resolvers on CDN Performance Using a Causal Approach. Computer Networks, Special issue on "Traffic and Performance in the Big Data Era", 109, Part 2:200 – 210, 2016.
- [15] Hadrien Hours, Ernst Biersack, and **Patrick Loiseau**. A causal approach to the study of TCP performance. ACM Transactions on Intelligent Systems and Technology, Special Issue on "Causal Discovery and Inference" (K. Zhang, J. Li, E. Bareinboim, B. Schölkopf, and J. Pearl, editors), 7(2):25:1–25:25, January 2016.
- [16] Patrick Loiseau, Galina Schwartz, John Musacchio, Saurabh Amin, and S. Shankar Sastry. Incentive mechanisms for internet congestion management: Fixed-budget rebate versus time-of-day pricing. IEEE/ACM Transactions on Networking, 22(2):647–661, 2014.
- [17] Patrick Loiseau, Claire Médigue, Paulo Gonçalves, Najmeddine Attia, Stéphane Seuret, François Cottin, Denis Chemla, Michel Sorine, and Julien Barral. Large deviations estimates for the multiscale analysis of heart rate variability. *Physica A*, 391(22):5658–5671, November 2012.
- [18] Paulo Gonçalves, Shubhabrata Roy, Thomas Begin, and **Patrick Loiseau**. Dynamic resource management in clouds: A probabilistic approach. *IEICE Transactions on Communications, special section on Networking Technologies for Cloud Services*, E95-B(8):2522–2529, 2012. (Invited paper).
- [19] Julien Barral and **Patrick Loiseau**. Large deviations for the local fluctuations of random walks. Stochastic Processes and their Applications, 121(10):2272–2302, 2011.
- [20] **Patrick Loiseau**, Paulo Gonçalves, and Pascale Vicat-Blanc Primet. A long-range dependent model for network traffic with flow-scale correlations. *Stochastic Models*, 27:333–361, 2011.
- [21] Edmundo Pereira de Souza Neto, Elmer Andrés Fernández, Patrice Abry, Béatrice Cuzine, Patrick Loiseau, Christian Baude, Jean Frutoso, Claude Gharib, and Xavier Martin. Application of cardiac autonomous indices in the study of neurogenic erectile dysfunction. *Urologia Internationalis*, 86(3):290–297, 2011.
- [22] **Patrick Loiseau**, Paulo Gonçalves, Guillaume Dewaele, Pierre Borgnat, Patrice Abry, and Pascale Vicat-Blanc Primet. Investigating self-similarity and heavy-tailed distributions on a large scale experimental facility. *IEEE/ACM Transactions on Networking*, 18(4):1261–1274, August 2010.
- [23] Edmundo Pereira de Souza Neto, Patrice Abry, **Patrick Loiseau**, Jean-Christophe Cejka, Marc-Antoine Custaud, Jean Frutoso, Claude Gharib, and Patrick Flandrin. Empirical mode decomposition to assess cardiovascular autonomic control in rats. Fundamental & Clinical Pharmacology, 21(5):481–496, October 2007.

Articles in international refereed conferences

- [24] Mathieu Molina, Nicolas Gast, **Patrick Loiseau**, and Vianney Perchet. Trading-off price for data quality to achieve fair online allocation. In *Proceedings of the Thirty-seventh Conference on Neural Information Processing Systems (NeurIPS)*, December 2023.
- [25] Johnnatan Messias, Vabuk Pahari, Balakrishnan Chandrasekaran, Krishna P. Gummadi, and Patrick Loiseau. Dissecting bitcoin and ethereum transactions: On the lack of transaction contention and prioritization transparency in blockchains. In Proceedings of the Financial Cryptography and Data Security (FC), May 2023.

[26] Eleni Gkiouzepi, Athanasios Andreou, Oana Goga, and **Patrick Loiseau**. Collaborative ad transparency: Promises and limitations. In *Proceedings of the 44th IEEE Symposium on Security and Privacy (S&P)*, May 2023.

- [27] Mathieu Molina and **Patrick Loiseau**. Bounding and approximating intersectional fairness through marginal fairness. In *Proceedings of the Thirty-sixth Conference on Neural Information Processing Systems (NeurIPS)*, December 2022.
- [28] Vitalii Emelianov, Nicolas Gast, and **Patrick Loiseau**. Fairness in selection problems with strategic candidates. In *Proceedings of the 23rd ACM Conference on Economics and Computation (EC)*, July 2022.
- [29] Rémi Castera, Patrick Loiseau, and Bary S.R. Pradelski. Statistical discrimination in stable matchings. In Proceedings of the 23rd ACM Conference on Economics and Computation (EC), July 2022.
- [30] Till Kletti, Jean-Michel Renders, and **Patrick Loiseau**. Pareto-optimal fairness-utility amortizations in rankings with a dbn exposure model. In *Proceedings of the 45th International Conference on Research and Development in Information Retrieval (SIGIR)*, July 2022.
- [31] Benjamin Roussillon, Nicolas Gast, **Patrick Loiseau**, and Panayotis Mertikopoulos. Asymptotic degradation of linear regression estimates with strategic data sources. In *Proceedings of the 33rd International Conference on Algorithmic Learning Theory (ALT)*, March 2022.
- [32] Till Kletti, Jean-Michel Renders, and **Patrick Loiseau**. Introducing the expohedron for efficient pareto-optimal fairness-utility amortizations in repeated rankings. In *Proceedings of the Fifteenth International Conference on Web Search and Data Mining (WSDM)*, February 2022.
- [33] Johnnatan Messias, Mohamed Alzayat, Balakrishnan Chandrasekaran, Krishna P. Gummadi, **Patrick Loiseau**, and Alan Mislove. Selfish & opaque transaction ordering in the bitcoin blockchain: The case for chain neutrality. In *Proceedings of the 21st ACM Internet Measurement Conference (IMC)*, November 2021.
- [34] Benjamin Roussillon and **Patrick Loiseau**. Scalable optimal classifiers for adversarial settings under uncertainty. In *Proceedings of the 2021 Conference on Decision and Game Theory for Security (GameSec)*, October 2021.
- [35] Dong Quan Vu and **Patrick Loiseau**. Colonel Blotto Games with Favoritism: Competitions with Pre-allocations and Asymmetric Effectiveness. In *Proceedings of the 22nd ACM Conference on Economics and Computation (EC)*, July 2021.
- [36] Vitalii Emelianov, Nicolas Gast, Krishna P. Gummadi, and **Patrick Loiseau**. On fair selection in the presence of implicit variance. In *Proceedings of the 21st ACM Conference on Economics and Computation (EC)*, July 2020.
- [37] Dong Quan Vu, **Patrick Loiseau**, Alonso Silva, and Long Tran-Thanh. Path planning problems with side observations—when colonels play hide-and-seek. In *Proceedings of the Thirty-Fourth AAAI Conference on Artificial Intelligence (AAAI)*, February 2020.
- [38] Sarath Yasodharan and Patrick Loiseau. Nonzero-sum Adversarial Hypothesis Testing Games. In Proceedings of the Thirty-third Conference on Neural Information Processing Systems (NeurIPS), December 2019.
- [39] Dong Quan Vu, **Patrick Loiseau**, and Alonso Silva. Combinatorial Bandits for Sequential Learning in Colonel Blotto Games. In *Proceedings of the 58th Conference on Decision and Control (CDC)*, December 2019.
- [40] Vitalii Emelianov, George Arvanitakis, Nicolas Gast, Krishna P. Gummadi, and **Patrick Loiseau**. The price of local fairness in multistage selection. In *Proceedings of the 28th International Joint Conference on Artificial Intelligence (IJCAI)*, August 2019.
- [41] Athanasios Andreou, Márcio Silva, Fabrício Benevenuto, Oana Goga, Patrick Loiseau, and Alan Mislove. Measuring the facebook advertising ecosystem. In Proceedings of the Network and Distributed System Security Symposium (NDSS), February 2019.

[42] Abhijnan Chakraborty, Gourab K Patro, Niloy Ganguly, Krishna P. Gummadi, and **Patrick Loiseau**. Equality of Voice: Towards Fair Representation in Crowdsourced Top-K Recommendations. In *Proceedings of the ACM Conference on Fairness, Accountability, and Transparency (FAT*)*, January 2019.

- [43] Mohsen Minaei, Mainack Mondal, Patrick Loiseau, Krishna Gummadi, and Aniket Kate. Lethe: Conceal content deletion from persistent observers. In Proceedings of the 19th Privacy Enhancing Technologies Symposium (PETS), July 2019.
- [44] Dong Quan Vu, **Patrick Loiseau**, and Alonso Silva. Efficient computation of approximate equilibria in discrete Colonel Blotto games. In *Proceedings of the 27th International Joint Conference on Artificial Intelligence and the 23rd European Conference on Artificial Intelligence (IJCAI-ECAI), July 2018.*
- [45] Dong Quan Vu, **Patrick Loiseau**, and Alonso Silva. A simple and efficient algorithm to compute epsilon-equilibria of discrete Colonel Blotto games. In *Proceedings of the International Conference on Autonomous Agents and Multiagent Systems (AAMAS)*, July 2018. (Accepted as poster with extended abstract, the full version appeared in IJCAI-ECAI 2018.).
- [46] Giridhari Venkatadri, Athanasios Andreou, Yabing Liu, Alan Mislove, Krishna P. Gummadi, Patrick Loiseau, and Oana Goga. Privacy Risks with Facebook's PII-based Targeting: Auditing a Data Broker's Advertising Interface. In *Proceedings of the 39th IEEE Symposium on Security and Privacy (S&P)*, May 2018. Runner-up for Caspar Bowden Award for Outstanding Research in Privacy Enhancing Technologies.
- [47] Till Speicher, Muhammad Ali, Giridhari Venkatadri, Filipe Nunes Ribeiro, George Arvanitakis, Fabrício Benevenuto, Krishna P. Gummadi, **Patrick Loiseau**, and Alan Mislove. On the potential for discrimination in online targeted advertising. In *Proceedings of the Conference on Fairness*, Accountability, and Transparency (FAT*), February 2018. **Best Paper Award nominee**.
- [48] Athanasios Andreou, Giridhari Venkatadri, Oana Goga, Krishna P. Gummadi, **Patrick Loiseau**, and Alan Mislove. Investigating ad transparency mechanisms in social media: A case study of facebook's explanations. In *Proceedings of the Network and Distributed System Security Symposium* (NDSS), February 2018. **Runner-up for the 2019 CNIL-Inria Award for Privacy Protection**.
- [49] Xiaohu Wu, **Patrick Loiseau**, and Esa Hyytia. Towards designing cost-optimal policies to utilize iaas clouds with online learning. In *Proceedings of the 2017 IEEE International Conference on Cloud and Autonomic Computing (ICCAC)*, September 2017.
- [50] Athanasios Andreou, Oana Goga, and **Patrick Loiseau**. Identity vs. attribute disclosure risks for users with multiple social profiles. In *Proceedings of the 2017 IEEE/ACM International Conference on Advances in Social Networks Analysis and Mining (ASONAM)*, August 2017. **Best Paper Award Runner-up**.
- [51] Alberto Benegiamo, **Patrick Loiseau**, and Giovanni Neglia. Dissecting demand response mechanisms: the role of consumption forecasts and personalized offers. In *Proceedings of the American Control Conference (ACC)*, July 2016.
- [52] Xiaohu Wu and **Patrick Loiseau**. Algorithms for scheduling deadline-sensitive malleable tasks. In *Proceedings of the 53rd Annual Allerton Conference on Communication, Control, and Computing (Allerton)*, September 2015.
- [53] Oana Goga, **Patrick Loiseau**, Robin Sommer, Renata Teixeira, and Krishna Gummadi. On the reliability of profile matching across large online social networks. In *Proceedings of the 21st ACM SIGKDD conference on Knowledge Discovery and Data Mining (KDD)*, August 2015.
- [54] Hadrien Hours, Ernst Biersack, **Patrick Loiseau**, Alessandro Finamore, and Marco Mellia. A study of the impact of DNS resolvers on performance using a causal approach. In *Proceedings of the 27th International Teletraffic Congress (ITC)*, September 2015. (**Selected for submission of an extended version** to *Computer Networks special issue on "Traffic and Performance in the Big Data Era"*).

[55] Michela Chessa, Jens Grossklags, and **Patrick Loiseau**. A game-theoretic study on non-monetary incentives in data analytics projects with privacy implications. In *Proceedings of the 28th IEEE Computer Security Foundations Symposium (CSF)*, July 2015.

- [56] Michela Chessa, Jens Grossklags, and **Patrick Loiseau**. A short paper on the incentives to share private information for population estimates. In *Proceedings of the 19th International Conference Financial Cryptography and Data Security (FC)*, January 2015. (Short paper).
- [57] Galina Schwartz, **Patrick Loiseau**, and S. Shankar Sastry. The heterogeneous colonel blotto game. In *Proceedings of the International conference on network games, control and optimization (NETG-COOP)*. October 2014.
- [58] Stratis Ioannidis and **Patrick Loiseau**. Linear regression as a non-cooperative game. In *Proceedings* of the 9th conference on Web and Internet Economics (WINE), December 2013.
- [59] Lemonia Dritsoula, Patrick Loiseau, and John Musacchio. A game-theoretical approach for finding optimal strategies in an intruder classification game. In Proceedings of the 51st IEEE Conference on Decision and Control (CDC), December 2012.
- [60] Lemonia Dritsoula, **Patrick Loiseau**, and John Musacchio. Computing the nash equilibria of intruder classification games. In *Proceedings of the third Conference on Decision and Game Theory for Security (GameSec)*, November 2012. (Full paper).
- [61] **Patrick Loiseau**, Galina Schwartz, John Musacchio, Saurabh Amin, and S. Shankar Sastry. Congestion pricing using a raffle-based scheme. In *Proceedings of the International conference on network games, control and optimization (NETGCOOP)*, October 2011.
- [62] Oana Goga, **Patrick Loiseau**, and Paulo Gonçalves. On the impact of the flow-size distribution's tail index on network performance with TCP connections. In *Proceedings of the 29th International Symposium on Computer Performance*, *Modeling*, *Measurements and Evaluation (IFIP Performance*), October 2011.
- [63] Patrick Loiseau, Galina Schwartz, John Musacchio, and Saurabh Amin. Incentive schemes for internet congestion management: Raffles versus time-of-day pricing. In Proceedings of the 49th Annual Allerton Conference on Communication, Control, and Computing (Allerton), September 2011.
- [64] Patrick Loiseau, Paulo Gonçalves, Julien Barral, and Pascale Vicat-Blanc Primet. Modeling TCP throughput: an elaborated large-deviations-based model and its empirical validation. In *Proceedings of the 28th International Symposium on Computer Performance, Modeling, Measurements and Evaluation (IFIP Performance)*, November 2010. Best Paper Award Runner-up.
- [65] Patrick Loiseau, Paulo Gonçalves, Stéphane Girard, Florence Forbes, and Pascale Vicat-Blanc Primet. Maximum likelihood estimation of the flow size distribution tail index from sampled packet data. In Proceedings of the eleventh international joint conference on Measurement and modeling of computer systems (ACM SIGMETRICS / Performance), June 2009.
- [66] Patrick Loiseau, Paulo Gonçalves, Romaric Guillier, Matthieu Imbert, Yuetsu Kodama, and Pascale Vicat-Blanc Primet. Metroflux: A high performance system for analyzing flow at very fine-grain. In Proceedings of the 5th International Conference on Testbeds and Research Infrastructures for the Development of Networks and Communities (TridentCom), April 2009.

Articles in international/national refereed workshops

- [67] Michela Chessa and **Patrick Loiseau**. A cooperative game-theoretic approach to quantify the value of personal data in networks. In *Proceedings of the 12th Workshop on the Economics of Networks*, Systems and Computation (NetEcon), June 2017.
- [68] Hadrien Hours, Ernst Biersack, and **Patrick Loiseau**. Causal study of network performance. In Proceedings of the 17ème Rencontres Francophones sur les Aspects Algorithmiques de Télécommunications (Algo Tel), June 2014.

[69] Hadrien Hours, Ernst Biersack, and **Patrick Loiseau**. A causal study of an emulated network. In 10ème Atelier en Evaluation de Performances (AEP10), June 2014.

- [70] Patrick Loiseau, Paulo Gonçalves, and Pascale Vicat-Blanc Primet. How TCP can kill self-similarity. In Euro-NF workshop: Traffic Engineering and Dependability in the Network of the Future, September 2008.
- [71] **Patrick Loiseau**, Paulo Gonçalves, Yuetsu Kodama, and Pascale Vicat-Blanc Primet. Metroflux: A fully operational high speed metrology platform. In *Euro-NF workshop: New trends in modeling*, quantitative methods and measurements, in cooperation with NET-COOP, September 2008.
- [72] Patrick Loiseau, Paulo Gonçalves, Guillaume Dewaele, Pierre Borgnat, Patrice Abry, and Pascale Vicat-Blanc Primet. Vérification du lien entre auto-similarité et distributions à queues lourdes sur un dispositif grande échelle. In *9ème Atelier en Evaluation de Performances (AEP9)*, June 2008.
- [73] Patrick Loiseau, Paulo Gonçalves, and Pascale Vicat-Blanc Primet. A comparative study of different heavy tail index estimators of the flow size from sampled data. In Proceedings of the MetroGrid Workshop, within the framework of GridNets International Conference, October 2007.

Communications in conferences without proceedings

- [74] Nicolas Gast, Stratis Ioannidis, Patrick Loiseau, and Benjamin Roussillon. Linear regression from strategic data sources. In the ACM EC 2019 Workshop on Learning in Presence of Strategic Behavior, June 2019.
- [75] Dong Quan Vu, **Patrick Loiseau**, and Alonso Silva. Approximate equilibria of the Colonel Blotto game. In the 14th European meeting on game theory (SING14), July 2018. (1-page abstract).
- [76] Dong Quan Vu, Patrick Loiseau, and Alonso Silva. Approximate equilibria of Blotto-type games. In Journée SMAI-MODE, March 2018.
- [77] Michela Chessa, Jens Grossklags, and **Patrick Loiseau**. On non-monetary incentives for the provision of public goods. In the 13th European meeting on game theory (SING13), July 2017. (1-page abstract).
- [78] Michela Chessa, Jens Grossklags, and **Patrick Loiseau**. A game-theoretic study on non-monetary incentives in data analytics projects with privacy implications. In 8e édition de l'Atelier sur la Protection de la Vie Privée (APVP), June 2017.
- [79] Vijay Kamble, **Patrick Loiseau**, and Jean Walrand. Regret-optimal strategies for playing discounted repeated games. In 27th International Conference on Game Theory in Stony Brook, July 2016. (1-page abstract).
- [80] Michela Chessa and **Patrick Loiseau**. The impact of the graph structure on a public good provision game: a cooperative approach with applications to personal data release on social networks. In the 11th European meeting on game theory (SING11-GTM2015), July 2015. (1-page abstract).
- [81] **Patrick Loiseau**, Paulo Gonçalves, Romaric Guillier, Matthieu Imbert, Oana Goga, Yuetsu Kodama, and Pascale Vicat-Blanc Primet. *Metroflux*: a high performance system for very fine-grain flow analysis. In *Grid'5000 Spring School*, April 2009.

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

[83] Rainer Böhme, Richard Clayton, Jens Grossklags, Katrina Ligett, **Patrick Loiseau**, and Galina Schwartz. Special Issue on the Economics of Security and Privacy: Guest Editors' Introduction. *ACM Transactions on Internet Technology*, 18(4):47:1–47:3, November 2018. (Guest editorial).

- [84] Patrick Loiseau, Aaron Roth, and Adam Wierman. The 10th Workshop on the Economics of Networks, Systems and Computation (NetEcon 2015). ACM Performance Evaluation Review, 43(3):47–48, December 2015. (Guest editorial).
- [85] John Chuang and **Patrick Loiseau**. The joint Workshop on Pricing and Incentives in Networks and Systems (W-PIN+NetEcon 2014). *ACM Performance Evaluation Review*, 42(3):2–3, December 2014. (Guest editorial).
- [86] Costas Courcoubetis, Roch Guérin, Patrick Loiseau, David Parkes, Jean Walrand, and Adam Wierman. Special Issue on Pricing and Incentives in Networks and Systems: Guest Editors' Introduction. ACM Transactions on Internet Technology, 14(2–3):8:1–8:3, October 2014. (Guest editorial).
- [87] **Patrick Loiseau**, David Parkes, and Jean Walrand. The joint Workshop on Pricing and Incentives in Networks and Systems (W-PIN+NetEcon 2013). *ACM Performance Evaluation Review*, 41(4):2–3, March 2014. (Guest editorial).
- [88] **Patrick Loiseau** and Jean Walrand. The first Workshop on Pricing and Incentives in Networks (W-PIN 2012). ACM Performance Evaluation Review, 40(2):12–13, September 2012. (Guest editorial).

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 On fair selection in the presence of implicit and differential variance	November 2021
RAWNET workshop (in colocation with WiOpt), Avignon, France Learning in Colonel Blotto games	June 2019
DS3 Data Science Summer School, Paris, France Transparency, fairness, and privacy challenges in social media targeted advertising	June 2018
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 October 2016 ENS Lyon (SIESTE seminar), Lyon, France 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 Sophia Tech (Sophia Tech 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

Large deviations and application to fine TCP modeling

September 2010

Politecnico di Torino (Telecommunication Network Group), Torino, Italy

Heavy-tails and correlations in network traffic

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

November 2009

May 2010

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.

Facebook bug could have exposed your phone number to marketers. Naked Security, Jan. 9, 2018.

Facebook bug let advertisers find users' phone numbers. The Telegraph, Jan. 9, 2018.

Une faille dans Facebook laissait les annonceurs récupérer nos numéros de téléphone. Siècle digital, Jan. 8, 2018.

Facebook Bug Could Let Advertisers Get Your Phone Number. WIRED, Jan. 7, 2018.

Algorithms Are Getting Better at Matching Your Different Social Media Profiles. But they're still pretty lousy at it. MOTHERBOARD, June 10, 2015.

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