

CURRICULUM VITÆ

Yann Busnel

Professor at IMT Nord Europe
Vice-president for Research and Innovation

June 2024

Research topic:

Modeling large-scale communication systems
Massive data streams analytics

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Research

- **Topics:** Modeling and statistical processing of massive data streams.
Models and applications of large-scale distributed systems and networks.
- **110 publications:**
 - Journal** 20 articles in international refereed journals and 3 articles in national journals (in scientific mediation journals);
 - Conferences** 56 articles in international peer-reviewed conferences (ICDCS, DSN, Middleware, IM, NCA, Sirocco, Opodis, DEXA, EDCC, DEBS, *etc.*) and 25 articles in national peer-reviewed conferences (AlgoTel, BDA, CoRes, CFSE, *etc.*);
 - Proceedings** 5 international and national proceedings (NCA 2015, SF@EDCC 2014, AlgoTel 2013, ACM TADDS 2012, DYNAM 2011).
- **Recent projects :**
 - CMA TCE (2023–2028) – ANR Funding – 4 m€ *PI for IMT Atlantique;*
 - EDIH Bretagne (2022–2027) – EU Funding – 5,5 m€ *Co-PI for IMT Atlantique;*
 - CSRP 6702-1 (2022–2025) – CEFIPRA funding – 190 k€ *PI for IMT Atlantique;*
 - OM&AI2DM Chair (2021–2024) — Rennes Metropole funding – 200 k€ *PI for IMT Atlantique*
 - Beyond 5G project (2021–2024) — BPI funding – 7 m€ *Task leader for IMT Atlantique*
 - IA@IMT project (2021–2024) — ANR funding – 3 m€ *Task leader for IMT Atlantique*
 - CEFIPRA Raman Charpak Fellowship (2020) – 12 k€ *PI for IMT Atlantique;*
 - ONCOSHARe (2018–2020) – Co-Regional Funding – 280 k€ *Co-PI for IMT Atlantique;*
 - ANR Inshare (2016–2019) – PRC Santé – 750 k€ *Co-PI for IMT Atlantique;*
 - ANR SocioPlug (2013–2018) – INFRA – 630 k€ *Principal Investigator (PI);*
- **PhD Advising :** Nagham Alhadad (2010–2014), Nicolò Rivetti (2013–2016), Alassane Samba (2015–2018), Pranav Nerurkar (2016–2020), Vasile Cazacu (2017–2020), Jérôme Henry (2019–2021), Léo Lavaur (2020–*), Khalil El Houssni (2021–2023), Pierre-Marie Lechevalier (2021–*), Antoine Rebstock (2021–*).
- **Visiting position**
 - Indian Institute of Technology Indore – India – 2016 & 2022–2023;
 - Veeramata Jijabai Technological Institute (VJTI Mumbai) – India – 2019–2022;
 - Université La Sapienza de Rome – Italy – 2008–2009 & 2016;
 - Vrije Universiteit Amsterdam – Netherland – 2005;
 - Ottawa University – Canada – 2004.
- **Main Research Collaborations** (apart from IMT Atlantique, Ensai and Université de Nantes) :
 - *International*
 - **Università La Sapienza di Roma, Italy** Roberto Baldoni, Roberto Beraldi, Leonardo Querzoni (12 publications [15],[24], [25], [54], [55], [61], [84], [75], [78], [95], [106], [108]);
 - **VJTI Mumbai, India** Dhiren Patel (1 funded project and 8 publications [8],[12],[13],

- [14],[40],[43],[44],[81]);
- **Indian Institute of Technology, India** Kapil Ahuja, Aruna Tiwari (2 funded projects and 2 publications [9], [36]);
 - **University of Lisboa, Portugal** Hugo Miranda (2 publications [26], [68]);
 - **University of Texas in Dallas, USA** Ravi Prakash (1 publication [75]);
- *National*
- **IRISA/INRIA Rennes – Bretagne Atlantique** Emmanuelle Anceaume, Bruno Sericola (3 funded projects and 25 publications [10], [18], [19], [21], [22], [23], [49], [50], [54], [57], [58], [59], [60], [61], [63], [64], [66], [69], [70], [72], [73], [82], [100], [101], [103]) and Anne-Marie Kermarrec (11 publications [25], [74], [76], [77], [78], [79], [80], [107], [108], [109], [110]);
 - **Université de Rennes 1 (CHU)** Marc Cuggia (2 funded projects and 2 publications [48], [51]);
 - **Inria Sophia-Antipolis** David Coudert, Christelle Caillouet (5 publications [34],[45], [47],[87],[90]);
 - **Inria Lyon** Hervé Rivano (1 funded project and 2 publication [33],[86]);
 - **Université de Toulouse II** Christophe Sibertin-Blanc (1 publication [71]);

Teaching

- 3000 h of teaching at all levels, from Bachelor to Master, plus additional training (preparation for the Aggregation examination, Preparatory Class for the Grandes Ecoles, lifelong learning for high school teachers, etc.) in 11 different institutes.
- Co-head of *Master of Sciences in Big Data* at Ensai (2014–2016).
- Head of the master program « Statistics and Data Sciences » at Ensai (2014–2015).
- Head of the continuing education at Rectorat de Nantes, for high-school teachers in Computer Sciences and Digital Sciences (ISN) for graduating class (2012–2014).
- Member of the 2012-2016 accreditation study committee of the University of Nantes (design of the educational model of the Licence-Masters in computer science).

Collective Responsibilities

- **Institut Mines-Télécom**
 - Vice-President for Research and Innovation at IMT Nord Europe (2023–*);
 - Member of the IMT Nord Europe Executive Committee (2023–*);
 - Co-head of the *Distributed Systems axis* of GDR RSD (2023–*);
 - Member of the *Scientific Council of CEFIPRA* – Indo-French Centre for Promotion of Advanced Research (2023–*);
 - Head of department « *Network Systems, Cybersecurity and Digital law* » at IMT Atlantique (2017–2023);
 - Head of department « *D2 – Network, Telecommunication and Services* » at UMR IRISA (2019–2023);
 - IMT Atlantique representative on the *Scientific and Pedagogical Committee* of the EUR CyberSchool (2020-2023).
 - Co-Head of the MOOC Editorial Board at Institut Mines-Télécom (2018–2023);
 - Co-Head of the PRACOM chair at IMT Atlantique (2017–2023);
 - Financial head of the Cyber CNI chair at IMT Atlantique (2019–2023);
 - Member of the IMT Atlantique Executive Committee (2017–2023);

- Member of the Selection and Validation Committee (CSV) of the *Images&Réseaux* competitiveness cluster (2017–2019)
- **Ensay**
 - Head of the Department of Computer Sciences at Ensay (2014–2016);
 - Member appointed to the Ensay School Council and Board of Directors (2014–2016);
- **Université de Nantes**
 - Member appointed to the Improvement Council of the Master in Computer Sciences, University of Nantes (2017–*);
 - Chairman of the STIC commission at the University Council for International Relations (CURI) of the University of Nantes (2012–2014);
 - Head of International Relations, Computer Science Department, University of Nantes (2010–2012);
 - Elected member of the board of the computer department of the University of Nantes (2012–2014);
- **PhD Activities (out of supervision)**
 - Reviewer of PhD thesis of Adriano Cerocchi (University of Rome), 2012.
 - Reviewer of PhD thesis of Mansour Khelghatdoust (University of Sidney), 2018.
 - Reviewer of PhD thesis of Abderrahmen Kammoun (Université Jean Monnet, Saint-Etienne), 2019.
 - Reviewer of PhD thesis of Chandan Gautam (IIT Indore), 2020.
 - Reviewer of PhD thesis of Swati Kumari (Thapar Institute of Engineering & Technology), 2022.
 - Reviewer of PhD thesis of Fazail Amin (IIT Indore), 2023.
 - Reviewer of PhD thesis of Suchitra Agarwal (IIT Indore), 2023.
 - Reviewer of PhD thesis of Obsa Gilo Wakuma (IIT Patna), 2024.
 - Jury for PhD Defense of Herverson Ribeiro (Université de Rennes 1), 2012.
 - Jury for PhD Defense of Routa Moussaieb (IMT Atlantique), 2020.
 - Jury for PhD Defense of Alexandre Dey (IMT Atlantique), 2022.
 - Jury for PhD Defense of Igor Dias da Silva (Université de Nice), 2023.
- **Evaluation and organization of scientific events**
 - Chairman of the ICDCS 2024 – Federated Learning Track – (CORE A ranking), NCA 2015 Program Committee (CORE A ranking) and 4 international workshops (TADDS 2014, TADDS 2013, TADDS 2012, DYNAM 2011);
 - Member of program committees of international conferences : NCA 2024, NCA 2022, NCA 2020, Ad-Hoc Now 2020, ISCC 2020, NCA 2019, NCCA 2019, Ad-Hoc Now 2019, NCA 2018, Ad-Hoc Now 2018, NCA 2017, NCA 2016, NCA 2015 (chair), IEEE GlobeCom 2015, Student Forum @ EDCC 2015 (chair), TADDS 2014 (chair), TADDS 2013 (chair), NCA 2013, PDP 2013, TADDS 2012 (chair), PDP 2012, iThings 2012, IWTMP2PS 2012, CyberTrust 2012, DYNAM 2011 (chair), CSE 2011, IWTMP2PS 2011, IWTMP2PS 2010.
 - Member of program committees of national conferences : ComPAS 2022, AlgoTel 2021, CoRes 2020, CoRes 2017, CoRes 2016, AlgoTel 2015, AlgoTel 2014, AlgoTel 2011 et CFSE 2011.
 - Chairman of the organizing committee of Opodis 2015 and AlgoTel 2013;
 - Member of the organizing committee of several events : ISCC 2020; Ad-hoc Now 2018; AlgoTel 2017; AlgoTel 2014; EuroPar 2007; AlgoTel 2008; Forum Docteur&Entreprise 2006; MajecSTIC 2005.

Curriculum Vitae

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Civil status

Yann Busnel

Born on November 26th 1981 at Paris XII^e.
Nationality French
Family situation Married, 2 children

Current professional situation

Full Professor (1st Class)

Vice-President for Research and Innovation

IMT Nord Europe
Campus de Recherche
764, Boulevard Lahure
59508 Douai
Tél: 03 27 71 21 46
Mob: 06 62 29 99 62

Professional experience

INSTITUTE	POSITION	PERIOD		FUNDER
IMT Nord Europe – Douai/Lille	Full Professor	01/06/23	–/–/–	Permanent
IMT Atlantique – Rennes	Full Professor	01/01/17	31/05/23	Permanent
Ensai – Rennes	Associate Professor	01/09/14	31/12/16	On leave
Université de Nantes	Associate Professor	01/09/09	31/08/14	Permanent
Université de Rome	Researcher	01/09/08	31/08/09	Post-doc
ENS Cachan – Bretagne	Lecturer	01/09/06	31/08/08	AMN
Université de Rennes 1	PhD candidate	01/09/06	31/08/08	AMN
ENS Cachan – Bretagne	Funded student	01/09/04	31/08/06	Normalien

Research keywords

Large Scale Data Stream, Distributed Information Systems, Distributed Algorithms, Communication Systems Modeling, Network Monitoring, Self-Organization, Scaling, Stochastic and Theoretical Analysis, Peer-to-peer Paradigms, Gossip Protocols, Population Protocols, Social Networks, Simulation and Practical Evaluation.

Use-cases: Cybersecurity, fleet of drones, health big data (pharmacovigilance or genomic sequence analysis), network monitoring, *etc.*

Research experience

Since 2017	Member of UMR IRISA / Inria Rennes – Bretagne Atlantique Integration into the project team Inria <i>Dionysos</i> (2017–2021), <i>Ermine</i> (2022) and <i>Sotern</i> (since 2023)	
2015–2016	External collaborator at Inria Rennes – Bretagne Atlantique Integration into the project team Inria <i>Dionysos</i>	(2 years)
2014–2016	Member of UMR CREST (Centre de Recherche en Economie et Statistique) Integration into the <i>Laboratoire de Statistique et Modélisation</i>	(2,5 years)
2009–2014	Member of UMR LINA (Laboratoire d’Informatique de Nantes Atlantique) Integration into the project team <i>Gestion de Données Distribuées</i>	(5 years)
2008–2009	Post-doctoral stay, Università « La Sapienza » di Roma Integration into the Roberto Baldoni research team	(1 year)
2005–2008	Master and PhD at UMR IRISA, Rennes Integration into the project team <i>ASAP</i>	(3,5 years)

Education

— HDR (French post-doctoral degree allowing its holder to supervise PhD students)

Title: Analyse et traitement de flux de données à large échelle — [127]

Date: Defended on 05/12/2016 at École Normale Supérieure de Rennes

Guarantor: LUC BOUGÉ (Professor, ENS Rennes, France)

Jury: LUC BOUGÉ (Chairman, Professor, ENS Rennes, France)
PASCAL FELBER (Reviewer, Professor, Université de Neuchâtel, Suisse)
NICOLAS HANUSSE (Reviewer, Senior researcher, CNRS, Bordeaux, France)
CLAUDE JARD (Examiner, Professor, Université de Nantes, France)
SÉBASTIEN TIXEUIL (Examiner, Professor, UPMC, Paris, France)
SANDRINE VATON (Reviewer, Professor, Télécom Bretagne, Brest, France)

— PhD

Title: Systèmes d’information collaboratifs et auto-organisés pour réseaux de capteurs large-échelle: « De la théorie à la pratique » — [6],[128]

Date: Defended on 18/11/2008 at IRISA – Université de Rennes 1
Graduate with honors

Advisor: ANNE-MARIE KERMARREC (Senior researcher, Inria)

Co-advisor: MARIN BERTIER (Associate professor, INSA Rennes)

Jury: LUC BOUGÉ (Chairman, Professor, ENS Cachan – Bretagne)
CAROLE DELPORTE-GALLET (Reviewer, Professor, Université de Paris 7)
PIERRE SENS (Reviewer, Professor, Université de Paris 6)
ISABELLE GUERIN-LASSOUS (Examiner, Professor, Université de Lyon 1)
VIVIEN QUÉMA (Examiner, Junior researcher, CNRS Grenoble)

— Previous Diplomas

- 2004-2005 **Master of sciences** in Computer Science
Magistère Computer Sciences and Telecommunication
École Normale Supérieure de Cachan – Bretagne, with great honors (6^e / 67)
- 2003-2004 **1st year of Master** in Computer Science
IFSIC, Université de Rennes 1, with great honors (2^e / 125)
- 2002-2003 **Bachelor** in Computer Science
IFSIC, Université de Rennes 1, with the highest honors (1^{er} / 158)
- 2001-2002 **Bachelor** in Mathematics
IRMAR, Université de Rennes 1, with honors
- 1999-2001 **Classe Préparatoire aux Grandes écoles**, MPSI then MP
Lycée Jacques Decour, Paris
- 1999 **Baccalauréat Scientifique**, Mathematics specialty, with honors

Research Activities

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Projects

European Digital Innovation Hub EDIH-Bretagne (2022–2027) *Holder: Pole Image et Réseaux – PI: Hervé Saliou – 5,5 m€.*

↔ *My role: PI for IMT Atlantique (until 2023).*

(Accelerate the digitization and Cybersecurity of SMEs/MCs/PSOs having innovation at the heart of its value proposition)

ANR AMI CMA Train-Cyber-Expert (2023–2028) *Holder: IMT – PI: Hervé Debar – 4 m€.*

↔ *My role: PI for IMT Atlantique (until 2023).*

(Meet the needs of the market by training more cybersecurity experts, by building educational resources in the form of digital content and technology platforms)

CEFIPRA CSRP project (2022–2025) *Holder: ISI Kolkata & IMT Atlantique – PI: Sanghamitra Bandyopadhyay & Yann Busnel – 190 k€.*

↔ *My role: PI for IMT Atlantique.*

(Exploring Graph Neural Networks (GNNs) for Data-driven Modeling of Poly-pharmacy Adverse Drug Events from drug-drug interactions)

Beyond 5G project (2021–2024) *Holder: Thales – PI: Emmanuel Dorato – 7 m€.*

↔ *My role: Task leader for IMT Atlantique (until 2023).*

(Sovereign and resilient solutions for 5G and Beyond)

IA@IMT (2021–2024) *Holder: IMT – PI: Stéphane Lecoecueche – 3 m€.*

↔ *My role: Task leader for IMT Atlantique.*

(IA & Cybersecurity - Trust and game theory)

CEFIPRA Raman Charpak Fellowship for Pranav Nerurkar (2020) *Holder: VJTI Mumbai – PI: D. Patel – 12 k€.*

↔ *My role: PI for IMT Atlantique.*

CIFRE Fellowship for Jérôme Henry (2019-2021) *Holder: CISCO System – PI: I. Hrasko – 45 k€.*

↔ *My role: co-PI for IMT Atlantique.*

ONCOSHARE project (2018–2020) *Holder: CHU/Rennes – PI: Marc Cuggia – 280 k€.*

↔ *My role: Co-PI for IMT Atlantique.*

(ONCOlogy big data SHARing for Research)

ANR PRC Inshare (2016–2019) *Holder: CHU/Rennes – PI: Marc Cuggia – 750 k€.*

↔ *My role: Co-PI for IMT Atlantique.*

http://www.agence-nationale-recherche.fr/projet-anr/?tx_lwmsuivibilan_pi2%5BCODE%5D=ANR-15-CE19-0024

LabEx BigClin (2016–2019) *Holder: LinkMedia/IRISA – PI: Vincent Claveau – 265 k€.*

↔ *My role: PI for Ensai.*

<http://www.bigclin.cominlabs.ueb.eu>

Microsoft Research Azure Award (2016–2017) *Holder: Ensai – PI: Y. Busnel – 20 k€.*

↔ *My role: Principal Investigator.*

CIFRE Fellowship for Alassane Samba (2015-2018) *Holder: Orange Labs – PI: P. Dooze – 30 k€.*

↔ *My role: PI for ENSAI.*

Microsoft Research Azure Award (2015–2016) *Holder: Ensai – PI: Y. Busnel – 20 k€.*

↔ *My role: Principal Investigator.*

ANR INFRA SocioPlug (2013–2018) *Holder: GDD/LINA – PI: Yann Busnel – 630 k€.*

↔ *My role: Principal Investigator (PI).*

<http://socioplug.univ-nantes.fr>

LabEx DeScenT (2013–2016) *Holder: GDD/LINA – PI: Pascal Molli – 355 k€.*

↔ *My role: Responsible for a WP.*

<http://www.descent.cominlabs.ueb.eu>

Other older projects, in which I have participated:

UE FP7 SM4All (2008–2011) *Holder: MIDLAB/Università La Sapienza di Roma – PI: Roberto Baldoni.*

<http://www.sm4all-project.eu>

UE FP7 CoMiFin (2008–2011) *Holder: ElsasDatamat – PI: Enrico Angori.*

<http://www.comifin.eu>

ANR SensLab (2008–2011) *Holder: D-NET/Inria – PI: Eric Fleury.*

<http://www.senslab.info>

ANR SVP (2005–2008) *Holder: CEA – PI: Jean-Benoît Pierrot.*

<http://surveiller-prevenir.irisa.fr>

EpiNets (2006–2008) *Holder: Inria / VU Amsterdam – PI: Anne-Marie Kermarrec / Maarten Van Steen.*

Gossip Workshop (2006) *PI: Anne-Marie Kermarrec / Maarten Van Steen.*

<https://www.lorentzcenter.nl/lc/web/2006/233/info.php3?wsid=233>

Resist (2006–2009) *European Network of Excellence*

<http://www.resist-noe.org>

Research chairs

OM&AI2MD (2021–2024) *Holder: Rennes SoB & IRISA – 200 k€.*

↔ *My role: PI for IRISA.*

Title: Operations Models and Artificial Intelligence to Manage Disasters

Partners: Rennes Metropole

Academic partners: IMT Atlantique, Rennes School of Business

<https://www.rennes-sb.com/chair-rennes-metropole/>

Cyber CNI (2017–2023) *Holder: IMT Atlantique – 350 k€/year.*

↔ *My role: Financial chairman.*

Title: Cyber Security of Critical Infrastructures

Partners: Conseil Régional de Bretagne, Airbus Defence and Space, Amosys, BNP Paribas, EDF, Nokia Bell Labs

Academic partners: IMT Atlantique, Telecom Paris, Telecom SudParis

<http://www.cybercni.fr>

PRACom (2006–2023) *Holder: IMT Atlantique – 200 k€/year.*

↔ *My role: Co-PI for IMT Atlantique.*

Title: Pôle de Recherche Avancée en Communications

Partners: Orange, Safran Data Systems, Mitsubishi Electric R&D, TurboConcept, ANRT Maroc, INEO Défense, Interface Concept, MVG Industries

<http://www.pracom.org>

Collaborations and visits

Visiting research stays abroad:

- **Indian Institute of Technology Indore – India (2022–23).** Visiting Professor for the academic year
- **Veermata Jijabai Technological Institute (VJTI Mumbai) – India (2019–2022).** Invited Professor for several weeks among 3 years.
- **Indian Institute of Technology Indore – India (2016).** Invited Professor for 2 weeks under GIAN funding
- **Università di Roma – « La Sapienza » (2016).** Invited Professor for 3 months
- **Università di Roma – « La Sapienza » (2008-2009).** Post-doctoral position for 1 year
- **University of Ottawa (2004).** Internship for 3 months

Active Collaborations:

- **Università La Sapienza di Roma, Italy** Roberto Baldoni, Roberto Beraldi, Leonardo Querzoni (12 publications [15],[24], [25], [54], [55], [61], [84], [75], [78], [95], [106], [108]);
- **VJTI Mumbai, India** Dhiren Patel (8 publications [8],[12],[13],[14],[40],[43],[44],[81]);
- **Indian Institute of Technology, India** Kapil Ahuja, Aruna Tiwari (2 funded projects & 2 publications [9], [36]);

- **University of Lisboa, Portugal** Hugo Miranda (2 publications [26],[68]);
- **Ecole Polytechnique Fédérale de Lausanne, Suisse** Denis Gillet, Adrian Holzer (1 publication [68]);
- **University of Neuchatel, Suisse** Yves Tillé (1 publication [42]);
- **University of Texas in Dallas, USA** Ravi Prakash (1 publication [75]);
- **IRISA/Inria Rennes – Bretagne Atlantique** Emmanuelle Anceaume, Bruno Sericola (3 funded projects and 30 publications [10], [18], [19], [21], [22], [23], [49], [50], [54], [57], [58], [59], [60], [61], [63], [64], [66], [69], [70], [72], [73], [82], [92], [94], [95], [96], [99], [100], [101], [103]);
- **Université de Rennes 1 (CHU)** Marc Cuggia (3 funded projects and 2 publication [48],[51]);
- **Inria Sophia-Antipolis** David Coudert, Christelle Caillouet (5 publications [34],[45],[47],[87],[90]);
- **Inria Lyon** Hervé Rivano (1 funded project and 2 publication [33],[86]);
- **Université de Toulouse II** Christophe Sibertin-Blanc (2 publications [71],[119]);
- **Université de Bordeaux (LaBRI)** Nicolas Hanusse, Pascal Weil;

Dissemination

Invited Seminars

- *How Federated Learning Help in Incident Detection of Large-scale Network Security?* Keynote with Leo Lavaur at EUR CyberSchool, Rennes, France, April 2023
- *How AI and federated learning will revolutionize large-scale network security?* Invited talk at IIT Indore, India, March 2023
- *The value of learning for securing large-scale networks.* Invited talk at IMT Webinar - Cyber&Risque, Online, March 2023
- *The value of learning for securing large-scale networks.* Invited talk at IMT-Inria-NICT Cybersecurity Workshop, Campus Cyber, Paris, France, March 2023
- *Blockchain: an introduction to large-scale distributed systems.* Invited talk at IIT Indore, India, January 2023
- *Involvement of AI in Cyber-Attack Detection.* Invited talk at 3rd Japanese-German-French AI Symposium, Tokyo, Japan, October 2022
- *The value of learning for securing large-scale networks.* Invited talk at 7th Franco-Japanese Cybersecurity Workshop, Tokyo, Japan, October 2022
- *Drone Fleet Coordination: How self-organisation solves all your problems.* Invited talk at IIT Indore, India, August 2022
- *Drone Fleet Coordination: How self-organisation solves all your problems.* Invited tutorial at GDR RSD ResCom Summer School, Yennes, June 2022
- *How self-organisation and decentralisation should make a smarter world?* Invited talk at UPL Sustainable University, India, March 2022
- *L'auto-organisation et la décentralisation pour un monde plus intelligent !* Invited talk at CITI, Lyon, February 2022
- *Blockchain Technology: Fundamentals of Synchronization and Distributed Consensus.* Invited Professor (virtual) at VJTI Mumbai, India, September 2021
- *How self-organisation and decentralisation should make a smarter world?* Keynote (virtual) at International Conference on Smart Computing and Communication, Kochi, India, July 2021
- *Attack-tolerant Sampling Methods over Sliding Window for Distributed Streams.* Keynote (virtual) at International Conference on Data Sciences and Engineering, Cochin University, India, December 2020

- *Blockchain Technology: Fundamentals of Synchronization and Distributed Consensus*. Invited Professor (virtual) at VJTI Mumbai, India, August 2020
- *Sampling in blockchains*. Keynote at Finishing School / Workshop on Blockchain Technology, VJTI Mumbai, India, February 2020
- *The need for enlightened sampling and self-organisation in the supervision of large-scale networks*. Invited seminar at IISc Bangalore, India, February 2020
- *Blockchain Technology: Synchronization, Consensus and Token Economy*. Cycle of seminars as Invited Professor at VJTI Mumbai, India, September 2019
- *The need for enlightened sampling in the supervision of large-scale networks*. Keynote at the International Conference on Data Sciences and Engineering, IIT Patna, India, September 2019
- *Large-scale data streaming*. Invited seminar at FEIT, University of Technology Sydney, Australia, August 2019
- *Le besoin d'échantillonnage avisé dans la supervision de réseaux à grande échelle*. Invited seminar at Laboratoire I3S de Sophia-Antipolis, France, April 2019
- *Blockchain opportunities in Europe & Diploma certification using the blockchain @ IMT Atlantique*. Invited talk at International workshop on Blockchain for Global Good, VJTI Mumbai, India, March 2019
- *Le besoin d'échantillonnage avisé dans la supervision de réseaux à grande échelle*. Invited seminar at Laboratoire d'Informatique de Grenoble, France, January 2019.
- *Big Data Panorama & Large-scale Data Streaming*. Keynote at CEP/FDP on Big Data Computing, IIT Patna, India, December 2018
- *How to generate uniform Samples on large-scale data streams*. Invited seminar at SMURF Workshop: Survey Methods and their use in Related Fields, Institute of Statistics, University of Neuchâtel, Switzerland, August 2018.
- *Comment créer un cloud social sécurisé pour ses données ? Le projet SocioPlug !*. Invited seminar at 23e Technoférence du Pôle Images&Réseaux, Nantes, France, December 2017.
- *Analyse et traitement de flux de données à large échelle*. Invited seminar at Journées non thématiques RESCOM 2017, Nice, France, January 2017.
- *Big Data Stream Analytics*. Cycle of seminars as Invited Professor at Indian Institute of Technology, Indore, India, October 2016.
- *Comment générer des échantillons uniformes sur des grandes masses de données ?* Invited seminar at 9e Colloque Francophone sur les sondages, Gatineau, Canada, October 2016.
- *Efficient stream analysis and its application to big data processing* Invited seminar at Huawei Technologies, France Research Center, Boulogne, France, October 2016.
- *Big Data for Security and Safety*. Cycle of seminars as Invited Professor at La Sapienza Università di Roma, Rome, Italy, April 2016.
- *Putting Health Data into Big Data*. Invited seminar at Data Sciences Symposium, 40 ans de l'IRISA, Rennes, France, November 2015.
- *Dependable Issues Resolved with Distributed Streams*. Invited seminar at LIP6, Paris, France, October 2015.
- *Le Big Data ou comment valoriser les données personnelles d'autrui*. Invited seminar at Lycée Brizeux, Quimper, France, October 2015.
- *Rapide panorama du Big Data: quel intérêt pour le renseignement ?* Invited seminar at Séminaire DGA: Traitement de l'information multimodale et « Big Data », Arcueil, France, October 2015.
- *Uniform Sampling and Deviation Estimation between Distributed Data Streams*. Invited seminar at Brown bag seminar de l'Ensaï. Bruz, France, January 2015.
- *Le projet SocioPlug (fédération de Raspberry Pi) et présentation de l'approche de sécurisation par*

- flux de données*. Invited seminar at Séminaire au vert du LINA. Pornichet, France, May 2014.
- *Systèmes d'information répartis, ou comment rendre l'anarchie à grande échelle possible*. Invited seminar at Lycée Brizeux, Quimper, France, March 2014.
 - *Large-scale data stream analysis*. Invited seminar at l'Ensaï, Rennes, France, February 2014.
 - *Analyse de flux de données à grande échelle*. Invited seminar at LaBRI, Bordeaux, France, December 2013.
 - *Retour d'expérience sur la formation ISN dans l'académie de Nantes*. Invited seminar at congrès de la SIF 2013, Sophia-Antipolis, France, February 2013.
 - *De l'essence à la diversité des protocoles épidémiques*. Invited seminar at Séminaire au vert du LINA. Ile de Berder, France, October 2010.
 - *Large-scale information system: moving theory into practice*. Invited seminar at Brown Bag Seminar au LINA. Nantes, France, January 2010.
 - *How to track deterministically moving objects using a binary sensor network*. Invited seminar at Télécom Bretagne. Rennes, France, April 2009.
 - *How to track deterministically moving objects using a binary sensor network*. Invited seminar at "la Sapienza" - Università di Roma. Rome, Italy, December 2008.
 - *SOLIST: A Lightweight Multi-Overlay Structure for Wireless Sensor Networks*. Invited seminar at "la Sapienza" - Università di Roma. Rome, Italy, November 2007.
 - *Verification in distributed system protocols*. Invited seminar at SITE - University of Ottawa, Ottawa, ON, Canada, August 2004.

Conference talks

- *Federated Learning × Security in Network Management*. Tutorial with Leo Lavaur at IEEE ICDCS 2024, Jersey City, USA, July 2024
- *FTM-Broadcast : Détermination efficace de coordonnées sur un réseau à grande échelle*. Technical talk at AlgoTel 2024, Saint-Briac-sur-Mer, France, May 2024
- *Federated Learning × Security in Network Management*. Tutorial with Leo Lavaur at IEEE NoF 2023, Izmir, Turkey, October 2023
- *Exploiting wireless network broadcasting for a more efficient 2-ways ranging*. Technical talk at Journées du GDR RSD 2023, Lyon, France, January 2023
- *Solution compacte aux requêtes d'appartenance sur des flux de données*. Technical talk at AlgoTel 2020, Lyon, France, October 2020
- *VESPA, ou l'art de coordonner une flotte de drone sans leader*. Technical talk at AlgoTel 2020, Lyon, France, September 2020
- *Attack-tolerant Unequal Probability Sampling Methods over Sliding Window for Distributed Streams*. Technical talk at ICCDA 2020, San Jose, USA, March 2020
- *Self-organized Disaster Management System by Distributed Deployment of Connected UAVs*. Technical talk at ICT-DM 2019, Paris, France, December 2019
- *L'art d'extraire des éléments du top-k en temps réel, sur des fenêtres glissantes réparties*. Technical talk at AlgoTel 2019, Narbonne, France, June 2019
- *Finding Top-k Most Frequent Items in Distributed Streams in the Time-Sliding Window Model*. Technical talk at DSN 2018, Luxembourg, June 2018
- *Ordonnancement dynamique pour un équilibrage de charge quasi-optimal dans les systèmes de traitement de flux*. Technical talk at AlgoTel 2017, Quiberon, France, June 2017
- *Online Scheduling for Shuffle Grouping in Distributed Stream Processing Systems*. Technical talk at Middleware 2016, Trento, Italy, December 2016.
- *Estimer la corrélation à la volée entre flux massifs est possible avec très peu de mémoire*. Technical

- talk at AlgoTel 2015, Beaune, France, June 2015.
- *Distributed Large-Scale Data Stream Analysis*. Tutorial at OPODIS, Cortina d'Ampezzo, Italy, December 2014.
 - *Nothing can compare with a population, besides agents*. Tutorial at ICT, Lisbonne, Portugal, May 2014.
 - *Analyse de flux de données à grande échelle*. Tutorial at ComPAS, Neuchatel, Switzerland, April 2014.
 - *An Information Divergence Estimation over Data Streams*. Technical talk at IEEE NCA 2012, Cambridge, MA, USA, August 2012.
 - *AnKLe: détection automatique d'attaques par divergence d'information*. Technical talk at AlgoTel 2012, La Grande Motte, France, June 2012.
 - *Characterizing the Adversarial Power in Uniform and Ergodic Node Sampling*. Technical talk at AlMoDEP @ DISC 2011. Roma, Italy, September 2011.
 - *Uniform and Ergodic Sampling in Unstructured Peer-to-Peer Systems with Malicious Nodes*. Technical talk at OPODIS'10. Tozeur, Tunisia, December 2010.
 - *Trust your Social Network According to Satisfaction, Reputation and Privacy*. Technical talk at WRAS @ PODC'10. Zurich, Switzerland, July 2010.
 - *Towards Connectivity Management, using Social Networking*. Technical talk at SNDS @ PODC'10. Zurich, Switzerland, July 2010.
 - *Dynamic Computation of Population Protocols*. Technical talk at ICT'10, Doha, Qatar, April 2010.
 - *A Formal Characterization of Uniform Peer Sampling based on View Shuffling*. Technical talk at WRAS @ PDCAT'09. Hiroshima, Japan, December 2009.
 - *On Gossip and Populations*. Technical talk at SIROCCO'09. Piran, Slovenia, May 2009.
 - *SOLIST or How to Look for a Needle in a Haystack*. Technical talk at WiMob'08. Avignon, France, October 2008.
 - *On the deterministic tracking of moving objects with a binary sensor network*. Technical talk at DCOSS '08, Ile Santorin, Greece, June 2008.
 - *Suivi et identification de trajectoires sur un réseau de capteurs binaires*. Technical talk at AlgoTel'08, Saint-Malo, France, May 2008.
 - *Solist: Structure multi-couche P2P à faible consommation pour les réseaux de capteurs sans-fil*. Technical talk at CFSE'6, Fribourg, Switzerland, February 2008.
 - *GCP: Gossip-based code propagation for large-scale mobile wireless sensor network*. Technical talk at Autonomics'07, Rome, Italy, October 2007.
 - *SOLIST: Self-Organized Large-scale Inventory Structure with Wireless Sensor Networks*. Technical talk at 2nd Authoring Workshop of EuroSys'07, Lisbonne, Portugal, March 2007.
 - *ProxSem: Interest-based proximity measure to improve search efficiency in p2p systems*. Technical talk at ECUMN'07, Toulouse, France, February 2007.
 - *ProxSem: Mesure de proximité sémantique pour les systèmes de partage de fichiers pair-à-pair*. Technical talk at CFSE'5, Perpignan, France, October 2006.
 - *Prise en compte d'aspects sémantiques dans la construction d'un réseau pair-à-pair*. Technical talk at MajecSTIC'05, Rennes, France, November 2005.

Supervision

PhD Advising

Naghm Alhadad From October 2010, I co-supervised (30 %) Nagham Alhadad, a PhD student funded by CNRS with Patricia Serrano-Alvarado (30 %) and Philippe Lammare (director, 40 %). His research topic is user-centred community systems. [67],[71],[83],[102],[104],[105].

Nicolò Rivetti From November 2013, I co-supervised Nicolò Rivetti (60 %), a PhD student with Achour Mostéfaoui (director, 10 %) and Leonardo Querzoni (30 %). His research topic is large-scale data stream processing for cybersecurity and real-time systems. [54],[55],[56],[59],[60],[61],[93],[94],[95],[96],[97],[114].

Alassane Samba Since February 2015, I co-supervised Alassane Samba (50%), a PhD student on CIFRE funding with Gwendal Simon (director, 50%). His research topic is Big Data technologies and predictive models for network QoS in 4G/5G. [53],[98]

Vasile Cazacu Since February 2017, I co-supervised Vasile Cazacu (50%), a PhD student with Emmanuelle Anceaume (50%). His research topic is Distributed computing for clinical data mining. [50] (*Thesis not defended, withdrawn in July 2020 due to COVID-19*)

Pranav Nerurkar Since October 2019, I co-supervised Pranav Nerurkar, PhD student at VJTI Mumbai, with Dhiren Patel. His research topic concerned the Bitcoin forensics, predominantly focused on feature engineering/extraction followed by supervised learning to identify illicit activities on Bitcoin. [8],[12],[13],[14],[40]

Jérôme Henry Since October 2019, I co-supervised Jérôme Henry, Senior Engineer at Cisco, with Nicolas Montavont (50%). His research topic concerned the indoor localization using the most recent standards of 802.11. [39]

Léo Lavaur Since October 2020, I'm co-supervising Léo Lavaur, PhD Student at IMT Atlantique, with Marc-Oliver Pahl (50%). His research topic concerned the threat intelligence tools for IoT threat indexing and cooperative sharing.

Khalil El Houssni Since December 2021, I co-supervised Khalil El Houssni, PhD Student at IMT Atlantique, with Patrick Maillé (50%). His research topic concerned the study of interactions between artificial intelligence systems in cybersecurity using game theory. (*Thesis not defended, withdrawn in July 2023*)

Pierre-Marie Lechevalier Since October 2021, I'm co-supervising Pierre-Marie Lechevalier, PhD Student at IMT Atlantique, with Géraldine Texier, Hélène Le Bouder and Romaric Ludinard (25%). His research topic concerned trust and security in the composition of distributed network services and functions.

Antoine Rebstock Since October 2021, I'm co-supervising Antoine Rebstock, PhD Student at IMT Atlantique, with Romaric Ludinard (50%). His research topic concerned the extraction of probable scenarios by correlation of alerts.

In addition, during my stay at the University of Rome, I actively collaborated with two PhD students, who were under the supervision of Roberto Baldoni. Within this framework, I accompanied them in their research and in the experimental validations that they carried out:

- **Silvia Bonomi.** In collaboration with Ravi Prakash (University of Dallas, Texas, USA), we studied the possibility of extending the lifetime of a wireless sensor network and its reliability by developing duty cycles between highly related logic layers. [75],[121].

- **Marco Platania.** In collaboration with Giorgia Lodi and Leonardo Querzoni, we studied the decentralization of digital social networks such as Facebook. In this context, we sought to implement such networks in a totally distributed context.

Supervision of master and PhD internships

- **Akshat Chaudhary** (2023);
- **Pranjay Sidhwany** (2023);
- **Jenish Shah** (2023);
- **Mithun Singh** (2022);
- **Chaimae Benotsame** (2021);
- **Pearl Patel** (2020);
- **Seemandhar Jain** (2020);
- **Vamsi Bulusu** (2019);
- **Aditya Anand Shastri** (2018);
- **Marco Rocchi** (2016);
- **Richard Westerlynck** (2016);
- **Yves Mocquart** (2015);
- **Michele Dominici** (2009);
- **Luca Doria** (2009).

Responsibilities and distinctions

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Program committee

I've been **chair** of the program committees for the following conferences and workshops:

- ICDCS 2024 : 44th IEEE International Conference on Distributed Computing Systems, in Jersey City, New Jersey, USA - July 2024 (Ranked CORE A) — “Federated Learning, Analytics, and Deployment” Track.
- NCA 2015: 14th IEEE International Symposium on Network Computing and Applications, in Boston, USA - September 2015 (*Ranked CORE A*).
- Student Forum @ EDCC 2015: 11th European Dependable Computing Conference (EDCC 2015), in Paris, France - September 2015.
- TADDS 2014: 6th Workshop on Theoretical Aspects of Dynamic Distributed Systems, co-located with PODC 2014 - Paris, France - July 2014.
- TADDS 2013: 5th Workshop on Theoretical Aspects of Dynamic Distributed Systems, co-located with DISC 2013 - Jerusalem, Israel - October 2013.
- TADDS 2012: 4th Workshop on Theoretical Aspects of Dynamic Distributed Systems, co-located with OPODIS 2012 - Roma, Italy - December 2012.
- DYNAM 2012: 1st Workshop on Dynamicity, co-located with OPODIS 2011 - Toulouse, France - December 2011.

I've been **member** of the program committees for the following conferences:

- NCA 2024 : 23h IEEE International Symposium on Network Computing and Applications (Ranking CORE B) ;
- NCA 2022: 21h IEEE International Symposium on Network Computing and Applications (*Ranking CORE B*);
- ComPAS 2022: Conférence francophone d'informatique en Parallélisme, Architecture et Système;
- AlgoTel 2021: 23es Rencontres Francophones sur l'Algorithmique des Télécommunications;
- NCA 2020: 19h IEEE International Symposium on Network Computing and Applications (*Ranking CORE A*);
- ISCC 2020 : 25th IEEE International Symposium on Computers and Communications (*Ranking CORE B*);
- AdHoc-Now 2020 : 19th International Conference on Ad Hoc Networks and Wireless (*Ranking CORE B*);

- CoRes 2020: 5èmes Rencontres Francophones sur la Conception de Protocoles, l'Évaluation de Performance et l'Expérimentation des Réseaux de Communication;
- NCA 2019: 18th IEEE International Symposium on Network Computing and Applications (*Ranking CORE A*);
- NCCA 2019: 6th IEEE International Symposium on Network Cloud Computing and Applications;
- AdHoc-Now 2019 : 18th International Conference on Ad Hoc Networks and Wireless (*Ranking CORE B*);
- NCA 2018: 17th IEEE International Symposium on Network Computing and Applications (*Ranking CORE A*);
- AdHoc-Now 2018 : 17th International Conference on Ad Hoc Networks and Wireless (*Ranking CORE B*);
- NCA 2017: 16th IEEE International Symposium on Network Computing and Applications (*Ranking CORE A*);
- CoRes 2017: 2èmes Rencontres Francophones sur la Conception de Protocoles, l'Évaluation de Performance et l'Expérimentation des Réseaux de Communication;
- NCA 2016: 15th IEEE International Symposium on Network Computing and Applications (*Ranking CORE A*);
- CoRes 2016: 1ères Rencontres Francophones sur la Conception de Protocoles, l'Évaluation de Performance et l'Expérimentation des Réseaux de Communication;
- IEEE GlobeCom 2015: IEEE Global Communications Conference (*Ranking CORE B*);
- AlgoTel 2015: 17es Rencontres Francophones sur l'Algorithmique des Télécommunications;
- NCA 2014: 13th IEEE International Symposium on Network Computing and Applications (*Ranking CORE A*);
- AlgoTel 2014: 16es Rencontres Francophones sur l'Algorithmique des Télécommunications;
- NCA 2013: 12th IEEE International Symposium on Network Computing and Applications (*Ranking CORE A*);
- PDP 2013: 21th Euromicro International Conference on Parallel, Distributed and Network-Based Processing (*Ranking CORE C*);
- PDP 2012: 20th Euromicro International Conference on Parallel, Distributed and Network-Based Processing (*Ranking CORE C*);
- iThings 2012: 2012 IEEE International Conference on Internet of Things;
- IWTMP2PS 2012: 3rd International Workshop on Trust Management in P2P Systems;
- CyberTrust 2012: International Workshop on Trust and Privacy in Cyberspace;
- CSE 2011: 14th IEEE International Conference on Computational Science and Engineering (*Ranking CORE C*);
- IWTMP2PS 2011: 2nd International Workshop on Trust Management in P2P Systems;
- IWTMP2PS 2010: 1st International Workshop on Trust Management in P2P Systems;
- AlgoTel 2011: 13es Rencontres Francophones sur l'Algorithmique des Télécommunications;
- CFSE 2011: 8e Conférence Française en Systèmes d'Exploitation.

Reviewer

I have participated in review committees as an external reviewer for

- International venues:
 - IEEE Transactions on Parallel and Distributed Systems (*Ranking CORE A**);

- Elsevier Computer Networks (*Ranking CORE A*);
- ACM Mobile Network and Applications;
- Elsevier Peer-to-Peer Networking and Applications.
- International conferences: ISCC 2020, ESA 2018, DaWaK 2017, DISC 2016, DSN 2016, EDCC 2015, CIAA 2012, MSOP2P 2011, PDP 2011, IWTMP2PS 2010, EDBT 2010, OPODIS 2009, ICDCS 2009, P2P 2008, DISC 2008, Euro-Par 2008, ICDCS 2008, NPC 2007, ANIA 2007, ICPP 2006, Euro-Par 2006, IPTPS 2006 et Euro-Par 2005.
- National conferences: SYMPA 2011, BDA 2011, AlgoTel 2008 et 2006.

Project expertise

- Expert for the *Images&Réseaux* competitiveness cluster since 2017, ANR since 2015.

Collective responsibilities

PhD jury

Reviewer

- Reviewer for Obsa Gilo Wakuma (IIT Patna), on 07/05/2024.
- Reviewer for Suchitra Agarwal (IIT Indore), on 18/09/2023.
- Reviewer for Fazail Amin (IIT Indore), on 15/07/2023.
- Reviewer for Swati Kumari (Thapar Institute of Engineering & Technology), on 30/10/2022.
- Reviewer for Rohit Agarwal (IIT Indore), on 24/09/2021.
- Reviewer for Chandan Gautam (IIT Indore), on 08/01/2020.
- Reviewer for Abderrahmen Kammoun (University Jean Monnet, Saint-Etienne), on 08/07/2019.
- Reviewer for Mansour Khelghatdoust (University of Sidney), on 11/11/2018.
- Reviewer for Adriano Cerocchi (Università la Sapienza di Roma), on 15/10/2012.

Examiner

- Examiner for Igor Dias da Silva (Université de Nice), on 21/09/2023.
- Examiner for Alexandre Dey (IMT Atlantique), on 02/12/2022.
- Examiner for Jérôme Henry (IMT Atlantique), on 10/12/2021.
- Examiner for Routa Moussaieb (IMT Atlantique), on 07/10/2020.
- Examiner for Alassane Samba (IMT Atlantique), on 29/10/2018.
- Examiner for Nicoló Rivetti (Université de Nantes), on 30/09/2016.
- Examiner for Nagham Alhadad (Université de Nantes), on 20/06/2014.
- Examiner for Herverson Riveiro (Inria Rennes), le 12/10/2012.

Responsibilities

- *Vice-President for Research and Innovation* at IMT Nord Europe (2023–*);
- *Member of the Executive Committee* at IMT Nord Europe (2023–*);
- *Co-head of the Distributed Systems axis* of GDR RSD (2023–*);
- *Member of the Scientific Council* of CEFIPRA – Indo-French Centre for Promotion of Advanced Research (2023–*);
- *Head of Network Systems, Cybersecurity and Digital Law department* at IMT Atlantique (2017–2023).
- *Head of D2 – Network, Telecommunication and Services department* at UMR IRISA (2019–2023);

- *IMT Atlantique representative on the Scientific and Pedagogical Committee* of the EUR Cyber-School (2020-2023).
- *Co-Head of the MOOC Editorial Board* at Institut Mines-Télécom (2018–2023).
- *Member of the Executive Committee* at IMT Atlantique (2017–2023).
- *Member of Steering Committee* at ResCom at GDR CNRS RSD (2017–2021).
- *Member appointed to the Improvement Council* of the Master in Computer Sciences, University of Nantes (2017–*);
- *Member of the Selection and Validation Committee (CSV)* of the *Images&Réseaux* competitiveness cluster (2017–2019).
- *Head of the Department of Computer Sciences* at Ensai, Rennes (2014–2016).
- *Member appointed to the Ensai School Council and Board of Directors* (2014–2016).
- *Chairman of the STIC commission at the University Council for International Relations (CURI)* of the University of Nantes (2013–2014).
- *Elected member of the board of the Computer Sciences department* of the University of Nantes (2012–2014).
- *Head of International Relations, Computer Science department, University of Nantes* (2010–2012);
- *Member of the board of the Computer Sciences department* at École Normale Supérieure de Cachan – Bretagne (2004–2006).
- *National deputy for C.I.E.S West* (Training center for post-graduates).

Recruitment Committees

- *Member of 11 selections committees* for position of Professors and Associate Professors at IMT Nord Europe, spring and summer 2024.
- *Member of 2 selections committees* for position of Associate Professor at IMT Atlantique, spring and summer 2023.
- *Member of the selection committee* for position of Associate Professor MCF0447 at Sorbonne Université - LIP6, Paris, spring 2023.
- *Member of 2 selections committees* for position of Associate Professor at IMT Atlantique, spring and summer 2022.
- *Member of the selection committee* for position of Full Professor PR 0095 at Université de Rennes 1, spring 2022.
- *Member of the selection committee* for the position of Full Professor at IMT Atlantique, fall 2021.
- *Member of 2 selections committees* for position of Associate Professor at IMT Atlantique, spring 2021.
- *Member of the selection committee* for position of Associate Professor MCF0052 at Université de Nice-Sophie Antipolis, spring 2021.
- *Member of the selection committee* for position of Associate Professor MCF0535 at Université de Rennes 1, spring 2021.
- *Member of the selection committee* for the position of Full Professor at IMT Atlantique, winter 2021.
- *Member of the selection committee* for the position of Deputy Dean for Research and Innovation at IMT Atlantique, summer 2020.
- *Member of the selection committee* for the position of Dean of Master of Sciences at IMT Atlantique, summer 2020.
- *President of the selection committee* for the position of Associate Professor MCF4253 at INSA Lyon, spring 2020.

- *Member of the selection committee* for the position of Full Professor at IMT Atlantique, spring 2020.
- *Member of the selection committee* for the position of Full Professor at IMT Atlantique, spring 2018.
- *Member of 2 selections committees* for position of Associate Professor at IMT Atlantique, spring 2017.
- *Member of the selection committee* for the position of Associate Professor at ENSAI, spring 2015.
- *Member of the selection committee* for the position of MCF 1844 at PolyTech Nantes, spring 2011.

Organization Committees

- *Workshop on Artificial Intelligence for Healthcare (AI&Health)* collocated with the Knowledge Summit 3, in Pune, India (virtual), in November 2021 (**General Co-chair**);
- *Indo-French Seminar on Artificial Intelligence (IFSAI)*, in Bordeaux, France (virtual), in October 2020 and January 2021 (**General Co-chair**);
- *25th IEEE Symposium on Computers and Communications (ISCC 2020)*, in Rennes, France, in July 2020 (**Local Chair**);
- *Workshop on Artificial Intelligence* collocated with the Knowledge Summit 2, in Lyon, France, in November 2019 (**General Co-chair**);
- *17th International Conference on Ad Hoc Networks and Wireless (AdHoc-Now 2018)*, in Saint-Malo, France, in September 2018 (**Publicity Chair**);
- *19e édition des Rencontres Francophones sur l'Algorithmique des Télécommunications (AlgoTel 2017)*, in Quiberon, in May 2017;
- *18th International Conference on Principles of Distributed Systems (OPODIS 2015)*, in Rennes, France, in December 2015 (**Organizing Chair**);
- *11th European Dependable Computing Conference (EDCC 2015)*, in Paris, France, in September 2015 (**Student Forum Chair**);
- *6th Workshop on Theoretical Aspects of Dynamic Distributed Systems (TADDS 2014)* collocated with PODC 2014, in Paris, France, in July 2014 (**General Co-chair**);
- *16e édition des Rencontres Francophones sur l'Algorithmique des Télécommunications (AlgoTel 2014)*, in Ile de Ré, in June 2014;
- *5th Workshop on Theoretical Aspects of Dynamic Distributed Systems (TADDS 2013)* collocated with DISC 2013, in Jerusalem, Israel, in October 2013 (**General Co-chair**);
- *15e édition des Rencontres Francophones sur l'Algorithmique des Télécommunications (AlgoTel 2013)*, in Pornic, in May 2013 (**Organizing Chair**);
- *4th Workshop on Theoretical Aspects of Dynamic Distributed Systems (TADDS 2012)* collocated with OPODIS 2012, in Rome, Italy, in December 2012 (**General Co-chair**);
- *1st Workshop on Dynamicality (DYNAM 2011)* collocated with OPODIS 2011, in Toulouse, France, in December 2011 (**General Co-chair**);
- *10e édition des Rencontres Francophones sur l'Algorithmique des Télécommunications (AlgoTel 2008)*, in Saint-Malo, in May 2008;
- *13th European Conference on Parallel and Distributed Computing (Euro-Par 2007)*, in Rennes, France, in August 2007 (**Submission Chair**);
- *1er Forum Docteurs et Entreprises*, in Rennes, in 2006;
- *3e Manifestation des Jeunes Chercheurs francophones dans les domaines des STIC (MajecSTIC 2005)*, in Rennes, in 2005

Associations

- Member of *Société Informatique de France* (SIF) since 2011.
- Member of *Institute of Electrical and Electronics Engineers* (IEEE) since 2007.
- President of *ADOC* (Association of PhD Students in Doctoral School MATISSE) in 2005-2006.
- Member of the board of *Nicomaque* association during 3 years.
- Member of *confédération des jeunes chercheurs* (CJC).

Apart from my professional activities, for more than 15 years I have directed and chaired a semi-professional dance troupe composed of 40 artists (musicians, dancers, actors).

Teaching activities

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Summary of courses provided

Since my first given lesson, I've teach to a large trend of levels and public: Licenses (all level), Masters (Research and Professional), Miage (Management for Computer Sciences), Intensive foundation degree for Selective schools, Intensive foundation degree for Agrégation exam, Engineer students in Computer Sciences, High-school professor continuing education. I've given Lectures for 15 to 300-student classes, Tutorials and Practical Works for 6 to 40-student groups. Below, the list of public institution where I've teach (ranked by the number of hours spent there):

- Université de Nantes, Computer Sciences Department (~ 1200 h equiv. Tuto.);
- Ecole Nationale de la Statistique and de l'Analyse de l'Information (~ 310 h equiv. Tuto.);
- Ecole Normale Supérieure de Rennes (~ 220 h equiv. Tuto.);
- Chateaubriand High-school, Rennes (~ 192 h equiv. Tuto.);
- Université de Rennes 1, Computer Sciences Department (~ 125 h equiv. Tuto.);
- Rectorat of Académie de Nantes (~ 120 h equiv. Tuto.);
- IMT Atlantique (ex-Télécom Bretagne) (~ 105 h equiv. Tuto.);
- Université de Rennes 1, Mathematics Department (~ 40 h equiv. Tuto.);
- Ecole Normale Supérieure de Cachan, Eco-Management (~ 38 h equiv. Tuto.).

Topic-based summary tables of lessons

TOPIC	DURATION
Large-scale Distributed Architectures	153 h Lect. + 215 h Tuto/Lab
Programming (Java, Javascript, C, Caml, Pascal, etc.)	74 h Lect. + 640 h Tuto/Lab
Algorithmic	72,33 h Lect. + 158 h Tuto/Lab
Large-scale database	61 h Lect. + 111 h Tuto/Lab
UML	30 h Lect. + 24 h Tuto/Lab
Computer networks and systems	60 h Lect. + 80 h Tuto/Lab
Advising / Methodology / Basic tools	40 h Lect. + 144 h Tuto/Lab

MOOC participation

From 2018 to 2023, I have been co-leading the editorial committee on the MOOC (Massive Online Open Courses) deployment strategy within the Institut Mines-Télécom. Today, the IMT's collection includes 40 MOOCs and the IMT is currently working on the production or design of about twenty new MOOCs, including three new certification courses.

In addition, I participated in 2020 in the new version of the MOOC *Ose les métiers de l'industrie du futur*, a discovery path on Industry 4.0.

<https://www.fun-mooc.fr/courses/course-v1:MinesTelecom+04040+session02/about>

Publications

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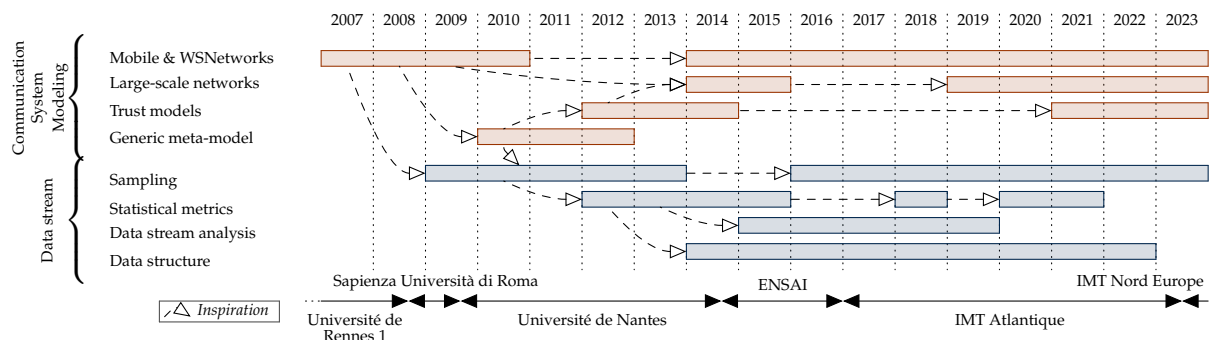
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Context

The numerical bibliographical references refer to the exhaustive list of my personal publications, presented below.

To date, my personal bibliography stands at 106 entries (excluding posters and research reports) including 5 conference proceedings (NCA 2015, SF@EDCC 2014, AlgoTel 2013, TADDS 2012, DYNAM 2011), 20 articles in international journals (including 12 A and A* ranked), 81 articles in peer-reviewed conferences (including 56 international), 1 book publishing my PhD thesis, plus various peer-reviewed poster sessions and research reports.

Apart from my doctoral manuscripts and HDR [6], [127], [128], the list below presents the distribution of these publications according to my various contributions, whose temporal frieze below gives a global vision of my research of the last 13 years:



- **Mobile networks & WSN:** *population protocols* [57], [65], [74], [76], [107], [122], [123]; *trajectory tracking* [25], [78], [108]; *self-organization* [28], [29], [77], [85], [109], [124]; *broadcasting* [79], [111], [125]; *energy saving* [41], [75], [121]; *quality of service* [11], [17], [33], [37], [38], [39], [53], [86], [88], [98]; *fleet of UAVs* [34], [45], [47], [90];
- **Large-scale networks:** [7], [26], [30], [31], [32], [35], [43], [44], [58], [59], [63], [68], [89], [100];
- **trust models:** [20], [62], [67], [83], [102];
- **Generic meta-model:** [20], [71], [104], [105];
- **Sampling:** [9], [10], [23], [24], [36], [42], [59], [69], [73], [82], [84], [96], [106], [120];
- **Statistical metrics:** [8], [14], [18], [22], [64], [66], [70], [72], [81], [99], [101], [103];
- **Data stream analysis in real time:** [15], [27], [16], [48], [49], [50], [52], [54], [55], [61], [93], [94], [95];
- **Data structure:** [19], [21], [46], [56], [60], [91], [97];
- **Blockchain:** [12], [13], [40], [43], [44];

Full list of publications

The following list as well as links to consult my publications are available on my professional page: <https://busnel.wp.imt.fr/publications/>

For publications whose information is available, you will also find the acceptance rate of conference papers (*AR*), or the 5-year impact factor for journals (*IF*) as well as their rank in the *CORE* ranking (up to 2019).

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[1] Yann Busnel, Dimiter Avresky. *Proceedings of the 14th IEEE International Symposium on Network Computing and Applications (IEEE NCA 2015)*. September 28-30th, 2015. Boston, MA, USA. (*CORE* : A)

[2] Yann Busnel. *Proceedings of Student Forum @ the 11th European Dependable Computing Conference (EDCC 2015)*. September 10th, 2015. Paris, France.

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[82] Emmanuelle Anceaume, Yann Busnel, Sébastien Gambs. *Characterizing the Adversarial Power in Uniform and Ergodic Node Sampling.* In the 1st International Workshop on Algorithms and Models for Distributed Event Processing (AlMoDEP '11) collocated with DISC 2011, Roma, Italy, September 2011.

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- [100] Romaric Ludinard, Emmanuelle Anceaume, Yann Busnel, Erwan Le Merrer, Jean-Louis Marchand, Bruno Sericola, Gilles Straub. *Anomaly Characterization Problems*. In the 16ème Rencontres Francophones sur les Aspects Algorithmiques de Télécommunications (AlgoTel '14), Ile de Ré, France, June 2014.
- [101] Emmanuelle Anceaume, Yann Busnel, Bruno Sericola. *Service d'échantillonnage uniforme résilient aux comportements malveillants*. In the 16ème Rencontres Francophones sur les Aspects Algorithmiques de Télécommunications (AlgoTel '14), Ile de Ré, France, June 2014.
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