CYBERSECURITY RESEARCHERS AT UBS

Cyber Security
Center

ubs:

Université Bretagne Sud

Yves GROHENS
Vice President
Innovation

Mathias TRANCHANT
Vice President
Research,
PhD Development
and Digital

UBS's ability to energize the territory in which it operates relies primarily on the quality of its research, which is now recognized nationally and internationally in clearly identified areas. Resolutely multidisciplinary, it relies on the richness of its human resources as well as on high-level research units.

The implementation of a Research and Innovation policy, geared towards the socioeconomic strengths of its territory, requires UBS to know and master the ecosystems in which its dynamics and scientific expertise are deployed.

Thus, as soon as 2013, UBS made the choice to launch the first French cyber defense apprenticeship training program for engineers. The stakes in Research and Innovation are paramount in this field and UBS will continue to develop its skills and offer in cybersecurity for the coming years.
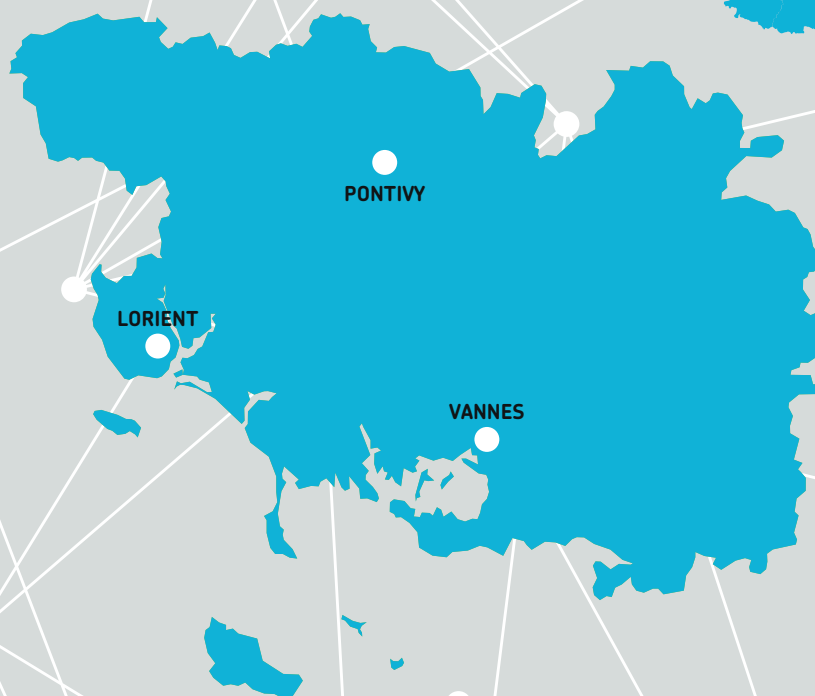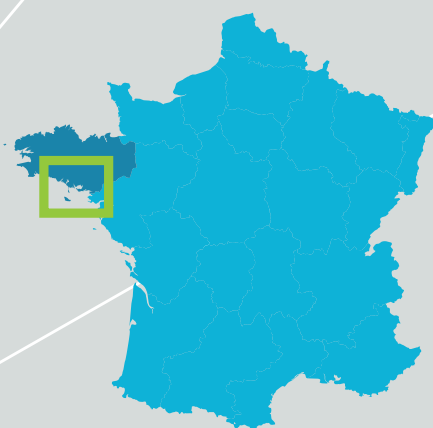
TABLE OF CONTENTS

Université
Bretagne Sud

ubs:

PONTIVY

LORIENT

VANNES

University on a truly human scale, enterprising and committed, , UBS has four main priorities: Cyber, Sea and Coast, Materials and Data Science. Thanks to the commitment of its 900 staff (including 500 teachers and research professors), nearly 10,000 students are trained each year on the three campuses of Lorient, Vannes and Pontivy.

Salah SADOU

Full Professor
Cybersecurity Research Coordinator at UBS

From the outset an agile regional university, UBS made the choice to focus on themes at the forefront of innovation. By devoting to them all its energy UBS produces results that fully meet the expectations both of world of research and business.

Within this collective effort, cybersecurity research at UBS is based on two principles:

- **Safety right from the start with prevention as a goal - "secure by design"**
  It's about seeing safety as an intrinsic property of a system and not just as one of its functionalities. This property must be defined and verified from the beginning at the design stage and preserved during execution.

- **Transdisciplinarity**
  Cybersecurity issues are naturally transdisciplinary and cannot be solved - effectively - by treating the different elements separately. Our effort consists in setting up a global project around cybersecurity as a meta-discipline: technical but also legal, ethical, geopolitical, communicational, etc. Experts in computer science and electronics have gradually joined forces with researchers from various fields such as industrial engineering, law, humanities, economics and, in the future, many other disciplines.

We thus consider digital security in an integrated and systemic way, because it combines human factors, installations, connected objects, etc.

HIGH-LEVEL RESEARCH

A global approach

Our perspective intermixes computer programs, electronic components, automatons and processes, designed and used by and for people: there is therefore a software - hardware - human triptych on which to lay the foundations for cybersecurity thinking.

The scientific expertise of five laboratories - university research to attain the best level

The overall dynamic is supported by the federation of several research units with renowned expertise in the field ranging from the study of the behavioral factors to the securing of crypto-processors:

- Lab-STICC - Laboratory of Sciences and Techniques of Communication Information and Knowledge in Lorient
- IRISA - Research Institute in Computer Science and Random Systems in Vannes
- LMBA - Brittany Atlantic Mathematics Laboratory in Vannes
- LEGO - Western France Laboratory of Economics and Management
- LABLEX - Law research laboratory in Vannes

Five main lines of research

UBS's research areas are diverse and complementary:

- Embedded systems and IoT (Internet of Things)
- Industrial cybersecurity
- Socio-technical systems of systems
- Big data and intrusion detection in massive data flows
- Cybersecurity and the individual

Dedicated teams

Around 30 researchers and doctoral students work in the field of cybersecurity at UBS.

VIDEO
Cybersecurity research at UBS
(French version - English subtitles
possible with YouTube)
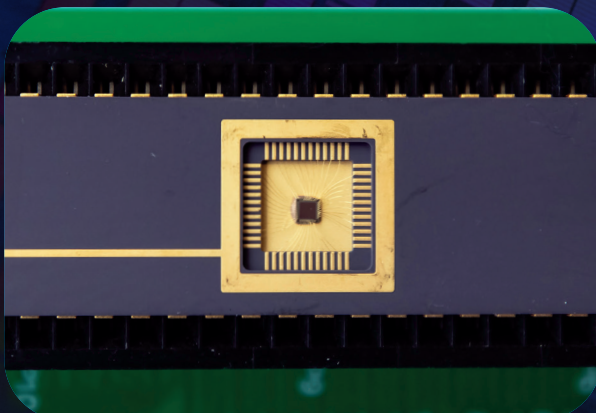
Crypto-Processor

A dedicated CPU for cryptographic applications: this is a 256-bit elliptical curve crypto-processor with hardware and algorithmic protections against specific physical attacks. This integrated circuit was designed by researchers from the CNRS in Brittany and produced in France.
UMR Lab-STICC - Laboratory of Information, Communication and Knowledge Sciences and Techniques.

HIGH-LEVEL RESEARCH

An innovative University Chair specializing in cybersecurity for major public events

Testimony of ENGIE partner of the chair

"

The UBS Foundation's Cybersecurity for Major Public Events Chair project is part of a strategic vision linked to several key international events, including the Paris Olympics in 2024.

This initiative deserves to be supported and it seemed valuable for us to be present from the chair beginning by bringing our reflection on these issues together with UBS laboratories and other partners who will join us.

"

The Chair: an essential link - business-oriented applied research

The research proposed under the Chair is designed to be fertile and easily exploitable. This makes it possible to go beyond current cybersecurity research results and be of immediate benefit to companies and organizations.

A crucial issue

The massive digitalization of all major national and international public events creates new vulnerabilities, potentially exploitable by hackers, with possible financial losses and physical risks for spectators.

A little-explored field - an innovative and original approach

Within this theme, the project's main thrust is to consider these events as «systems of social-technical systems» because they combine human factors, installations, connected objects, etc.

ENGiE   CYBERGEND   FC LORIENT

CYBERSECURITY CHAIR
FOR MAJOR PUBLIC EVENTS

JOIN US !

UMR (JOINT RESEARCH UNIT) 6074
RESEARCH INSTITUTE IN COMPUTER SCIENCE AND RANDOM SYSTEMS

IRISA

805 members including:
318 Researchers (26 UBS)
252 PhD students (22 UBS)

IRISA was created in 1975 and is a joint research unit in computer science, automation, robotics, signal and image processing. Across those themes, IRISA is positioned as the major research laboratory in Brittany with a strong presence on the campuses of Rennes, Vannes and Lannion..

IRISA on the UBS site develops activities in several areas of computer science:

• software architecture
• image synthesis and analysis
• complex images processing
• gestural interaction
• data mining
• mobile computing
• business intelligence
• cybersecurity

UBS researchers are participating in four of the UMR IRISA teams:

• ARCHWARE (software architectures)
• CASA (communication and services in
  networks with intermittent connectivity)
• EXPRESSION (interaction, search, analysis,
  synthesis of complex multimedia data)
• OBELIX (environment observation
  by complex imagery)

SCIENTIFIC FIELDS
Bioinformatics, systems security, new software architectures (Many cores, Cloud computing), virtual reality, artificial intelligence.

INDUSTRIAL PARTNERSHIPS
IRISA is involved in numerous **industrial partnership** operations in the fields
of telecommunications, defense,
IT and multimedia, medical instrumentation
and transportation
France: EADS, Orange, EDF, Nexter System, Renault, ST Microelectronics, Thales,
Technicolor, Alcatel...
International: TI, IBM, Google, Intel...

RESEARCH VALORIZATION
Research results are invested in numerous collaborations with industrial partners. Several start-ups have emerged from IRISA research.

LINK
To the IRISA website

Cyber Security Center

ubs:

Université Bretagne Sud

UMR I R I S A

Research Institute in Computer
Science and Random Systems

Jamal EL HACHEM

Associate Professor
Computer Science

> *Scientific research is one of the*
> *most exciting and rewarding*
> *of occupations*
>
> *By Frederick Sanger*

BIO

Jamal EL HACHEM is an Associate Professor at ENSIBS Vannes, University of Bretagne Sud (since the 1st September 2019). Her research activities focus on investigating Model-Driven solutions for cybersecurity and cyberdefense engineering in a System-of-Systems environment. She obtained her Ph.D. title at University of Pau in December 2017 defending her thesis entitled "A Model Driven Method to Design and Analyze Secure System-of-Systems Architectures. Application to Predict Cascading Attacks in Smart Buildings". She then worked two years as a temporary research assistant at University of Pau. She collaborated on software engineering projects with international research labs (CREST- University of Adelaide, School of Innovation design and Engineering- Mälardalen University).

Core data

PhD students: 2

Publications/Journals: 1– Journal of Systems and Software (JSS).

Conferences: 13 – ICECCS, APSEC, SoSE, etc.

Awards/Scholarships:
- Thesis grant from the Landes departmental council, Mont-de-Marsan, 2014-2017, amount: 84 000€;
- Merit-based Award of SIGSOFT CAPS (amount: US $ 350) for participation in ICSE, Italy, 2015;
- Scholarships from the University of Adelaide, Australia (amount: AU $ 5400) and UPPA (amount: 900€)
  for an international research visit, February - April 2017

International collaborations: CREST team - University of Adelaide (Australia);
School of Innovation Design and Engineering - Mälardalen University (Sweden)

Area(s) of research

Investigation of model-driven engineering and cybersecurity to guide cybersecurity modeling and analysis of software-intensive systems.

Fields of expertise

Modeling, analysis and simulation of cybersecurity
Modeling and assessment of vulnerabilities
Prediction / discovery of security attacks
Model-Directed Engineering (MDE) techniques
Domain Specific Modeling Languages (DSML) definition

Applicative examples

Security in different types of systems such as Systems-of-Systems, software-intensive systems, multi-agent systems
Security in different domains such as smart buildings, autonomous vehicles, smart electricity grids, Internet of Things, defense, E-health systems, etc.

Responsibilities

Responsible of gender diversity in the ENSIBS engineering school
Responsible of the integrated preparatory class (PEI STI2D de l'ENSIBS)

Domaine

Security by design

Mots clés

Security by Design
Software Vulnerabilities
Systems-of-Systems security
Model Driven Engineering (MDE)

Contact

jamal.el-hachem@univ-ubs.fr

Salah SADOU

Full Professor
Computer Science

*Transdisciplinarity enriches
science, but also the scientist*

BIO

Salah Sadou leads the transdisciplinary research of the Cybersecurity Center of UBS and the Software Cybersecurity department of ENSIBS engineering school. He obtained a PhD degree in Junuary 1992 at Ecole Centrale de Lyon, France. He has about 30 years of experience in research and education in software engineering science. His past research interests were centered on languages, processes and tools for designing and engineering systems where the evolution acts as a first-class entity. He was also involved in research concerning architectural description languages with non-functional properties as first class entities, software restructuring (from object-oriented to component-oriented), component-based description languages and software quality. His current research interests focus mainly on the "Secure by design" approach for System of Systems and Socio-technical System construction.

Link to full biography

Core data

PhD students: 20

Post-doctoral fellows: 3

Journals: 20 – JSS, Future Gener. Comput. Syst, Automated Soft. Eng., etc.

Conferences: 70 - WICSA, ECSA, ASE, CBSE, ICECCS, Middleware, etc.

Book(s): Software Evolution, Hermes-Lavoisier

Award(s): ACM SIGSOFT Distinguished Paper Award (2011), several best papers.

International collaborations: Université of Montreal (Canada), UQAM (Canada), Université Libre of Bruxelles (Belgique), Luxembourg University (Luxembourg), Qatar University (Qatar), Politecnico di Milano (Italie), etc.

Domain

Software security

Area(s) of research

Systems of Systems Security

Fields of expertise

Code vulnerability identification
Design vulnerability identification
Estimating human vulnerability in a system
Assessment of an element's vulnerability impact on the system
Proposing secure software development best practices

Keywords

Secure by Design
Software Vulnerabilities
Systems of Socio-Technical Systems Security
Security-Oriented Modeling
Security-Oriented Specification

Applicative examples

Organization of large secure events.
Identification and correction of flaws in existing software systems.

Responsibilities

Head of Software Cybersecurity Department of ENSIBS
Scientific Header of the University Chair Cybersecurity of major public events
Co-header of the RIMEL working group from the GDR GPL of CNRS (2006-2014)
Header of the SE research team (Valoria, UBS,2004-2012)

Contact

salah.sadou@univ-ubs.fr
+33698899263

Nicolas BELLOIR

Associate Professor
Computer Science

"
*It's important to go beyond
the limits of our discipline to be
enriched by other fields*
"

BIO

After a master's degree at Paul Sabatier University (Toulouse) and a stint in the aeronautics industry, Nicolas Belloir defended his thesis on software composition at University de Pau et des Pays de l'Adour in 2004, where he is appointed as Associate Professor and focuses on engineering languages for complex systems.He joins University Bretagne Sud in 2016 and is seconded to the French Military Academy of Saint-Cyr Coëtquidan. The stakes for the creation of a true cyber force are considerable and his research, often conducted jointly for the civilian and military worlds, highlights vulnerabilities detection. Through a multidisciplinary approach, the robustness of systems is designed to counter human vulnerabilities.Beyond software aspects, he is particularly interested in social engineering and socio-technical systems of systems.

Link to full biography

Core data

PhD students: 5

Publications: 5 – Systems Engineering, JSS, etc.

Conferences: 20 – SoSE, ICSR, Euromicro, etc.

International collaborations: Polytechnic University of Valencia (Spain), UQAM (Canada).

Domain

Security by design

Area(s) of research

Systems of systems security

Fields of expertise

Vulnerability detection during the design phases
Improved communication between software (or system) engineer and safety engineer
Modeling Language

Keywords

Design
Engineering
Systems of systems security
System and human
vulnerability analysis

Applicative examples

Vulnerability analysis software for socio-technical systems

Responsibilities

Various projects in dual civil and military research (DGA – French Procurement Agency / Naval Group) on software and socio-technical systems vulnerabilities detection.

Contact

nicolas.belloir@univ-ubs.fr
+33 (0) 2 97 01 72 17

Cyber Security
Center

ubs:

Université Bretagne Sud

UMR IRISA

Research Institute in Computer
Science and Random Systems

Isabelle BORNE

Full Professor
Computer Science

" *Computer security is not just a matter for specialists and without women there would be no Internet - let us remember that the first «bug» was discovered thanks to Grace Hopper!* "

BIO

After obtaining her PhD thesis at Pierre-et-Marie Curie University (Paris-6), Isabelle Borne spent two years post-doc in Montreal at the University of Montreal and at McGill University in Canada. Then she spent 10 years at René Descartes University (Paris 5) and then 7 years at Ecole des Mines de Nantes. In 1994 she was invited to the Educational Technology Institute at the Open University in Milton Keynes (UK) and at Manchester where she worked on object-oriented programming environments. Finally she joined the University of Bretagne Sud in 2001 where she is currently interested in the security of systems of systems, and more specifically in the use of security patterns and metrics to guarantee a level of security of software architectures of systems of systems.

Link to full biography

Core data

PhD students: 7

Publications: 11 - JSS, Future Generation Computer, etc.

Conferences: 46 - CSMR, ECSA, SoSE, ISPEC, etc.

International collaborations: University of Montreal (Canada), Universidad de los Andes (Colombia), etc.

Domain

Software engineering

Area(s) of research

Security of systems of systems architectures

Fields of expertise

Modeling and meta-modeling of systems of systems architecture
Refactoring with security patterns
Software security metrics

Keywords

Model based engineering
Secure software architecture
Secure by design
Security patterns

Applicative examples

Simulation of an emergency system-of-systems
Assessment of the security level of a software architecture.
Secure smart building architecture

Responsibilities

MathSTIC Doctoral School Deputy Director
UBS management team member
Co-responsible of the MDE action of GDR GPL &ASR (2012-2015)
Security WG Co-leader of the GDR GPL software development

Contact

Isabelle.Borne@univ-ubs.fr

UBS:

Université Bretagne Sud

UMR IRISA

Research Institute in Computer
Science and Random Systems

Pierre–François MARTEAU

Full Professor
Computer Science

" Abnormality is the anomaly of normalcy unless it's the other way round. Identifying the anomaly is often the preamble to disruptive discoveries. "

BIO

After obtaining an engineering degree in computer science at the École Nationale Supérieure d'Electronique et d'Informatique de Bordeaux (ENSEIRB-MATMECA), then a PhD at the Institut national polytechnique de Grenoble in 1988, Pierre-François Marteau held a post-doctoral position at the University of Geneva, then at the INLS of the University of California (San Diego). Following a stint at the Institut des Hautes Etudes Scientifiques, he worked as a consultant at Bertin Technologies, before joining University Bretagne Sud in 1999. His work focuses on algorithmic approaches of artificial intelligence for pattern recognition in temporal and sequential data. He develops applications in the fields of information flow processing, particularly in a context of computer security and the processing of data from multi-modal sensors and text mining collected on the web and social networks.

Link to full biography

Domain

Computer Science,
discrete mathematics

Area(s) of research

Anomaly and intrusion detection
Data processing in flow and time series (classification, regression, clustering)
Motion analysis and gesture recognition
Textual data mining

Fields of expertise

Algorithms and complexity
Signal processing and pattern recognition
Natural language processing

Keywords

Artificial Intelligence
Statistical learning
Data Mining
Pattern recognition
Anomaly detection
Time series analysis
Text data processing

Applicative examples

Several algorithms for intrusion detection and algorithmic efficiency: DiFF-RF (network traffic monitoring), STree4CS (event sequencing for attack detection), PSS-Phase Shape Separation (handwritten signature authentication by analyzing time and shape patterns).

Contact

pierre-francois.marteau@univ-ubs.fr
+33 (0) 2 97 01 72 99

Jérémy BUISSON

**Associate Professor
Computer Science**

"

*Research is also a daily
intellectual humility*

"

BIO

Jeremy Buisson defended his thesis in 2006 at INSA Rennes on scientific calculation software self-adaptation. As a post-doctoral fellow at Telecom Bretagne (IMT Atlantique), he contributed to satellite embedded software architectures and their updates issues in an uninterrupted service environment (National Research Agency project). He was recruited in 2009 at University Bretagne Sud and seconded to the Ministry of Defense at the French Army military academy Saint-Cyr. Since 2008 his work has focused on dynamic reconfiguration, more specifically on systems of systems with an evolutionary approach. He participated in the creation of the Archware team at IRISA in 2012 around these questions. Design methodologies and engineering processes are currently at the heart of his research, whether for defense or cybersecurity.

Link to full biography

Core data

PhD students: 2

Publications: 3 – JSS, etc.

Conferences: 25 – SoSE, CBSE, etc.

International collaborations: University of Constantine (Algeria)

Domain

Software Engineering

Area(s) of research

Systems of systems engineering.

Fields of expertise

Software architecture.
Dynamic reconfiguration.
Model-driven engineering.

Keywords

Systems of systems
Architecture
Evolution

Responsabilitie

● Deputy Director of the Specialised Master's Degree in «Conduct of Operations and Crisis Management in Cyber Defence» (2015 - *).

Contact

jeremy.buisson@irisa.fr

Nicolas COURTY

**Full Professor
Computer Science**

*" You can fool once a thousand AI
algorithms, but not a thousand
times an AI algorithm "*

BIO

After a PhD on active vision (INSA Rennes, 2002), Nicolas Courty specialized in crowd simulation during his post-doctorate in Brazil. He joined University Bretagne Sud in 2004 where he continued with the analysis of crowd simulation models and sign language. He was invited to Beijing for eight months in 2012, then two months at EPFL Lausanne in 2014. Since 2012 he's been developing methodologies for machine learning and remote sensing. His research activities within the Obelix team (IRISA) that he leads since 2020, focus on statistical learning, optimal transportation, and deep learning. In cybersecurity issues, he mainly focuses on the security and vulnerabilities of AI algorithms. An article reviewer for several AI journals and conferences, he also holds a chair in Artificial Intelligence at the National Research Agency, with a project on optimal transport and remote sensing.

Lien vers la biographie complète

Core data

PhD students: 10

Post-doctoral fellows: 3

Publications: 25 - IEEE PAMI, IEEE TGRS, Machine Learning, etc.

Conferences: 53 - NeurIPS, ICML, ICLR, AISTATS, etc.

Book(s): 4 chapters – Deep learning for earth science, Wiley 2020.

Award(s): U.V. Helava Award 2015 ; 4 Best Paper Awards (international conferences).

Patent(s): 1 - Method for counting individuals in a crowd, 2014 (Thales / CNRS)

International collaborations: Kyoto University (Japan), Wageningen University (NL), University of the Balearic Islands (ES). Invited to Beijing (2012 - funded by the Chinese Academy of Sciences) then to EPFL Lausanne (Switzerland - 2014).

Area(s) of research
AI Theory
Remote Sensing
Computer vision

Fields of expertise
Statistical learning
Deep learning

Applicative examples
Satellite images semantic segmentation in a context of jammed labels
Security of AI Algorithms in Remote Sensing
Graphs structured data learning

Responsabilities
- Head of the Obelix team (since 2020)
- Member of ELLIS, European laboratory for the promotion of Artificial Intelligence (since 2020)
- Head of the ANR OATMIL project - links between optimal transport theory and machine learning
- Head of the Labex COMINLABS Dynalearn project - links between deep learning and physical models
- Leader of the UBS Data Sciences Division
- UBS Data Sciences Engineering Masters' Director of Studies
- IA international expertise for ANR (National Research Agency)

Domain
Artificial intelligence

Keywords
Optimal transport
Neural networks
Core machines

Contact
nicolas.courty@univ-ubs.fr
+33 (0) 2 97 01 72 13

Lab-STICC

UMR 6285

**SCIENCES AND TECHNOLOGY
LABORATORY OF INFORMATION,
COMMUNICATION
AND KNOWLEDGE**

LAB-STICC

521 members including:
235 Researchers (26 UBS)
207 PhD students (27 UBS)

Lab-STICC's scientific project of can be summarized by: "from sensors to knowledge: communicating and deciding"

The 3-pole organization makes it possible to concretely decline the objective of connecting people and communication devices:

- The MOM pole (Microwaves, Optoelectronics and Materials) is developing research on materials, sensors and microwave antennas
- The CACS pole (Communications, Architectures, Circuits and Systems) synergizes its multiple expertise on the design of systems, the algorithmic / architecture articulation, new methods linked to the optimization of multisensor systems and finally the use of advanced mathematical methods to answer "discretization" constraints
- The CID (Knowledge, Information, Decision) pole ensures the complementarity of methods related to collaborative decision-making in the use of information from the most varied sensor systems

SCIENTIFIC COLLABORATIONS
France: some 50 public partnerships.
International: numerous partnerships with foreign universities (Thailand, Italy, Canada, Australia, United States, Great Britain, Germany, Brazil, Peru).

INDUSTRIAL PARTNERSHIPS
France : numerous public/private partnerships
15 regional partnerships (at VSE/SME and group levels), 30 national cooperations.
International : 12 cooperations with international companies (Great Britain, Greece, Japan, Vietnam, United States, Germany, Norway, Korea).

LINK
To the Lab-STICC website

Guy GOGNIAT

Full Professor
Embedded systems

"

Collaborative research is a good
to be cultivated with passion

"

BIO

After obtaining his PhD at Nice-Sophia Antipolis University in 1997, Guy Gogniat joined Université Bretagne Sud (University of South Brittany) in 1998. In 2004-2005, he was invited to the University of Massachusetts, Amherst, USA where he worked on the security of embedded systems using reconfigurable technologies. While his research activities cover many fields (model-based design methodologies, adaptive systems, reconfigurable architectures, hardware and software design), since 2003 he is more specifically interested in the security of embedded systems and future applications around health and Industry 4.0. His research benefits from national and European funding programs.

Link to full biography

Core data

PhD students: 25

Post-doctoral fellows: 4

Publications: 40 - IEEE TVLSI, IEEE TC, ACM TODAES, ACM TECS, etc.

Conferences: 130 - DATE, FPL, FCCM, FPGA, FPT, ReCoSoC, DSD, etc.

Book(s): Security Trends for FPGAs - Springer.

Award(s): Best Paper Award (ReCoSoC 2015).

Patent(s): Reconfiguration method for an electronic circuit set of components (2008).

International collaborations: Ruhr-Universität Bochum (Allemagne), University of Massachusetts (USA), Université Libre de Bruxelles (Belgique), Université Technique de Munich (Allemagne), Information Technology University (Pakistan), Politecnico di Milano (Italie), etc.

Area(s) of research

Embedded systems security

Fields of expertise

Protection of embedded system architectures.
Protection of manycore architectures.
Development of crypto-processors.
Code Obfuscation.

Applicative examples

Protection of health data and multimedia applications.
Operating systems protection.

Responsibilities

- Vice-President Research UBS (2016-2020)
- Assessment Committee NRA Global Security and Cybersecurity (2017-2020)
- Lab-STICC Deputy Director (2010-2016)
- Co-Leader of the Math-STIC disciplinary group of the SICMA doctoral school (2010-2016)
- Institute of Information Sciences and their Interactions Scientific Council CNRS INS2I (2015-2018)
- Co-Leader theme C research group ISIS (2009-2015)
- Co-responsible for the digital security theme of the research group SoC-SiP (2009-2013)

Domain

Hardware security

Keywords

Cryptography
Cryptoprocessor
Hardware and software attacks
FPGA
NoC
Code Obfuscation

Contact

guy.gogniat@univ-ubs.fr
+33612849229

Vianney LAPÔTRE

Associate Professor
Embedded systems

"

*Today's research is the foundation
for tomorrow's technologies*

"

BIO

After obtaining his Ph.D in 2013 on reconfigurable multi-core architectures applied to telecom issues, Vianney Lapôtre returns to UBS in 2014, where he currently works on the security of embedded systems. Previously, as a Post-doctoral fellow at the LIRMN Lab (Montpellier) he participated in the European Mont-Blanc project where the technologies derived from embedded systems were studied to design tomorrow's energy efficient supercomputers. Since 2017, his research focuses on embedded processors security, particularly related to Industry 4.0 applications. Offering secure processors is a priority for him so that the greatest number benefit from trustworthy technologies.

Link to full biography

Sciences and Technology
Laboratory of Information,
Communication and Knowledge

Core data

PhD students: 6

Post-doctoral fellows: 1

Publications: 10 - IEEE TVLSI, IEEE TC, ACM TECS, etc.

Conferences: 30 - FPL, FPT, ISCAS, ASP-DAC, ISVLSI, etc.

International collaborations: Ruhr-Universität Bochum (Allemagne), Information Technology University (Pakistan).

Domain

Hardware security

Area(s) of research

Embedded systems security

Fields of expertise

Protection of embedded processor architectures
Protection of embedded system architectures

Keywords

Hardware and software attacks
On-board processors
FPGA

Applicative examples

Protection of connected objects
Protection of sensitive data

Collaborative projects

HardBlare (CominLabs 2015-2019 project) with IRISA, INRIA & IETR Rennes Labs.
TSUNAMY (NRA 2013-2017 project) with the Hubert Curien (St Etienne), LIP6 (Paris) & CEA Saclay Labs.

Contact

vianney.lapotre@univ-ubs.fr
+33 (0)2 97 87 45 68

Cyber Security Center
UBS:
Université Bretagne Sud

Lab-STICC

Sciences and Technology
Laboratory of Information,
Communication and Knowledge

Philippe TANGUY

Associate Professor
Embedded systems

"

The communicating objects security
must be designed with consumption
and durability in mind

"

BIO

Beginning with his PhD (INSA Rennes 2012), Philippe Tanguy has always been interested in embedded systems communications. As a postdoctoral fellow at Telecom Bretagne within a multidisciplinary team (IHSEV, Lab-STICC, IMT Atlantique) he studied IoT communication protocols, companion robots, health and well-being services (European project FP7 PRECIOUS). He was a teacher-researcher for two years at INSA Rennes before joining University Bretagne Sud in 2018. His work deals jointly with digital communication and hardware architecture. By designing objects that use low resources, his aim is to connect cities, industries and transport to make them smarter and more energy efficient. This is principally achieved by securing those objects and partly through communications to be more robust against network attacks.

Link to full biography

Core data

Post-doctoral fellows: 1

Publications: 5 - JCM, JECE, JISYS, KI - Künstliche Intelligenz, EAI endorsed transactions on pervasive health and technology

Conferences: 14 - WSPLC, ATC, ITST, EAI, etc.

Book(s): 2 chapters - Vehicular Technologies (2011), CMOS Emerging Technologies (2012)

Award(s): Best Paper Award (ICSNC 2014)

Area(s) of research

Embedded systems Security

Fields of expertise

Protection of communicating embedded system architectures
Software Defined Radio

Applicative examples

Intelligent city design, intelligent transport, industry of the future, health

Collaborative projects

- Head of the Cyber Security of Embedded Systems course of the Complex Systems Engineering Master (2020 -)
- POLYPHEME (CNRS contract 2017-2018) for INEO Defense
- PRECIOUS FP7 n ° 611366 (European project) - Design of digital health and well-being services
- CIFAER (ANR 2008-2012 project) - Flexible intra-vehicle communication and reconfigurable embedded architectures

Domain

Hardware Security

Keywords

Hardware and software attacks
Network attacks
FGPA
IDS / IPS

Contact

philippe.tanguy@univ-ubs.fr
+33 (0)2 97 87 45 67

UBS:

Université Bretagne Sud

Lab-STICC

Sciences and Technology
Laboratory of Information,
Communication and Knowledge

Cyrille CHAVET

Associate Professor
Embedded systems

> " *Doing science means accepting to*
> *be wrong a hundred times and to*
> *learn from one's mistakes until the*
> *satisfaction of a good solution* "

BIO

After exploring communications issues for the GAUT high-level tool as part of his thesis (2007 - UBS and STMicroelectronics-Grenoble), Cyrille Chavet spent a year at the TIMA laboratory in Grenoble before joining UBS in 2009 as associate professor. He is interested both in computer-aided design methodologies and in the optimization of communications within processors, more specifically in communication networks for flexible error-correcting code architectures. Currently, the FlexDEC-5G project immerses him in the issues related to 5G deployment. Work on the integration of constraints dealing with remote and low-speed communications will follow: updates of neural networks dedicated to AI, processor architectures intended for post-quantum encryption.

Link to full biography

Core data

PhD students: 7

Post-doctoral fellows: 3

Publications: 6 - IEEE TSP, IEEE TCAD, IEEE TCAS-II, etc.

Conferences: 40 - DATE, FPL, ICCAD, ICASSP, ISCAS, GLS-VLSI, etc.

Book(s): 1 - Advanced Hardware Design for Error Correcting Codes, Springer 2015

Patent(s): 4 - Devices for communication; Hardware neural networks

International collaborations: University of Bologna (Italy)

Area(s) of research

CAD Tools and Hardware Security.

Fields of expertise

High Level CAD & Synthesis Tools.
Digital communications Architectures.
Post-quantum cryptography Architectures.

Applicative examples

Architecture optimization for error-correcting codes.
Securing digital communications.

Collaborative projects

FlexDEC-5G (FEDER / Leader: Turbo Concept) - development of 5G corrective code decoders.
SENSE (CominLabs project / Leader: LabSTICC) - neural networks with Telecom Bretagne, IRISA.
Project P (FUI / Leader: Airbus) - definition of a common model for the development of software and hardware systems with the Aerospace Valley, Systematic and industrial partners.

Domain

Communications & Hardware Security

Keywords

CAD & HLS
Hardware and software architecture
Digital communications
VDHL

Contact

cyrille.chavet@univ-ubs.fr
+33 2 97 87 45 67

Arnaud TISSERAND

CNRS Senior Researcher
Computer Arithmetic

*"Investigating the links
between representations
of numbers, computing algorithms,
performance, energy consumption
and security of hardware/software
implementations"*

BIO

After obtaining his PhD in Computer Science at the École Normale Supérieure in Lyon in 1997, Arnaud Tisserand spent two years in the Swiss Center for Microelectronics and Microelectronic (CSEM) in Neuchâtel, before joining INRIA and the LIP laboratory Lyon as researcher in 1999. In 2005, he moved to a CNRS researcher position in the LIRMM Montpellier, then IRISA Lannion in 2008, and finally in 2016 the Lab-STICC Lorient, a common research unit CNRS/UBS. His main research activities are in hardware/software arithmetic with links in hardware architectures and associated tools. In cybersecurity, he studies cryptographic implementations, hardware architectures and protections against physical attacks.

Link to full biography

Core data

PhD students: 24

Publications: 25 - IEEE TC, IEEE ESL, ACM TECS, ACM TOMS, etc.

Conferences: 81 - ARITH, CHES, ASYNC, IndoCrypt, ECC, SECRYPT, WAIFI, etc.

Award(s): 2

Patent(s): 1

International collaborations: University College Cork (Ireland).

Domain

Computer Arithmetic

Area(s) of research

Arithmetic implementations
Low-power implementations
Cryptographic Implementations
Hardware Security
Protections against attacks
Embedded computing libraries
Design tools for hardware architectures

Keywords

Computation Algorithms
Number Systems
Low-power
Security (attacks)
Reliability (faults)
Sharp computing accuracy

Applicative examples

Embedded Systems
Computing Devices

Responsibilities

Head of the ARCAD research team

Contact

arnaud.tisserand@univ-ubs.fr
+33 (0)2 97 87 46 49

UBS:
Université Bretagne Sud

Lab-STICC

Sciences and Technology
Laboratory of Information,
Communication and Knowledge

Pascal BERRUET

Full Professor
Automation and industrial engineering

"
Innovation requires a global approach at the interfaces between fields of research
"

BIO

Pascal Berruet joined University Bretagne Sud in 1999 after his PhD on production systems reconfiguration obtained in 1998 at Ecole Centrale Lille. While his research has remained essentially the same (modeling, discrete-event systems), he's bringing it towards application areas around the issues and limits of personal assistance (disability, home automation, etc.). More generally, in a multidisciplinary approach, he integrates the problems of managing complex socio-technical systems. By combining human factors and automation, he's invested in man-machine cooperation going beyond breakdowns and attacks' robustness guarantee. He also proposes to make the industrial world aware to cyber-attacks and to the contribution of reconfigurable systems.

Core data

PhD students: 18

Post-doctoral fellows: 2

Publications: 16 – JIM, H&T, SIMULATION, Computers in Industry, Applied Ergonomics, STH, etc.

Conferences: 90 - MOSIM, IEEE SMC, IFAC, IMACS, HMS, MSR, etc.

Book(s): 5 - "Advanced Manufacturing", Springer 2019 ; "Techniques de l'ingénieur", 2007, 2010 ; Productique Traité IC2, 2002

Award(s): FRATH 2013 best thesis award

Patent(s) : 1 - Software repository: Consumer app (2016)

Area(s) of research

Management of complex socio-technical systems.
Design of safe and reconfigurable socio-technical systems.
Optimization of human-machine cooperation.

Fields of expertise

Reconfigurable discrete-event systems.
System supervision and control monitoring.
Generation of the control command.
Modeling / Simulation.

Applicative examples

Sensor/actuator level safety in industrial systems.

Responsabilities

- Head of Department IUT QLIO (2018-2020).
- Vice-President Socio-Economic and Industrial Relations. University Bretagne Sud (2012-2016).
- Responsible for the work-study master's degree production management (1999-2008).
- Pilot and coordinator of the SOLENN project -12 partners 900 experimenters around energy control and security (2014-2018).
- ASIM (e-health project) assistant for health and management of domotised habitats (2012-2014).
- Various CIFRE collaborations around design of control and supervision interfaces based on business models.

Domain

Complex systems safety

Keywords

Detection and reaction to attacks
Joint simulation
Socio-technical systems

Contact

pascal.berruet@univ-ubs.fr
+33 (0) 6 66 94 97 15

Lab-STICC

Philippe COUSSY

**Full Professor
Embedded systems**

"

*Research:
a fantastic space
of freedom*

"

BIO

A graduate of Paris 6 - Pierre and Marie Curie University, Philippe Coussy obtained his PhD on high-level synthesis at University Bretagne Sud in 2003. He appointed there as Associate Professor in 2004, obtained the ability to supervise research in 2011 and became full professor in 2014. His research activities focus on hardware architectures and associated software tools: high-level synthesis of non-programmable hardware accelerators, automatic generation of conflict-free memory interleavers, coarse-grained reconfigurable architectures and associated compilation tools, silicon neural network architectures, hardware and software design. Since 2015 he extended his field of research to the security of embedded systems. His research is supported by regional, national and international funding.

Link to full biography

Core data

PhD students: 21

Post-doctoral fellows: 6

Publications: 15 - IEEE (TCAD, D&T, TNNLS, TSP), ACM (JETCS, TECS), etc.

Conferences: 70 - DATE, ASP-DAC, ICCAD, FPL, ISCAS, ICASSP, SIPS, etc.

Book(s): 2 - "High-Level Synthesis: From Algorithm to Digital Circuit", 2008 Springer ; "Advanced hardware design for error correcting codes", 2008 Springer. Associate editor IEEE Transactions on Computer Aided Design of Integrated Circuits and Systems (TCAD), IEEE Signal Processing Letters (SPL)

Award(s): IEEE Senior Member, Member of the HiPEAC Network of Excellence

Patent(s): 6 - Interleaving method, neural network architecture method, fault tolerance device, active cache…

International collaborations: University of Bologna (Italy), ETH Zurich (Switzerland), Polytechnic University of Milan (Italy), University of California in Los Angeles (USA), University of California in San Diego (USA), McGill University (Canada), Brown University (USA), University of Palakkad (India)...

Area(s) of research

Hardware architectures and associated software tools

Fields of expertise

High-level synthesis - Electronic Design Automation (EDA)

Applicative examples

GAUT open-source high-level synthesis tool

Responsabilités

- Deputy director Lab-STICC (since June 2020)
- Deputy Director Phd School MathSTIC (2017-2020)
- Director of the STIC (which evolved to Complex Systems Engineering) Master's Degree (2015-2020)
- Head of the Communications, Architectures, Circuits and Systems (CACS) division of Lab-STICC (2016-2020)
- Member of the scientific committee of the LATERAL Thales / Lab-STICC joint laboratory (2018-)
- Elected member of the International Technical Committee IEEE Signal Processing Society, Design and Implementation of Signal Processing Systems (DISPS) (2011 to 2013, 2015 to 2021)
- Member of the evaluation committee National Research Agency (NRA) INS (2012-2014), NRA Micro-Nano CES 24 (2015-2017)
- Co-Leader of the Math-STIC disciplinary group of the SICMA PhD School (2016-2017)
- In charge of the theme « Embedded Software and Hardware Architectures « of the Research Group Soc-SIP (2011-2016)

Domain

Electronic components design method

Keywords

High-level synthesis
Reconfigurable coarse grain architectures
and associated tools
Automatic generation of conflict-free memory interleavers
Silicon neural network architectures

Contact

philippe.coussy@univ-ubs.fr
+33 (0) 2 97 87 45 65

Laurent GUILLET

Associate Professor
Health Social Psychology

> *To be effective technology, technological innovation and their uses must be accompanied by the study of human factors*

BIO

Laurent Guillet arrived at the University Bretagne Sud in 2004 and his main interest deals with human factors in the workplace. His first work focused on the cognitive processes involved in the evaluation of stress with the completion of his PhD in 2002 (University of Nantes). When the cybersecurity education program started at UBS, his research immediately joined the issues encountered, specifically the study of human behavior. The ENSIBS Cyber Range (technical platform for the simulation of cyber-attacks) enables him to study how individuals react and interact in crisis situations: stress management, mental load, cooperation phenomena, leadership, shared mental models to gain efficiency... This is done using various activity measurement devices (eye-tracking, heart rate monitors, brain activity measurement, communications analyzes).

Link to full biography

Core data

PhD students: 1

Post-doctoral fellows: 1

Publications: 14 - Stress & Health, Risk Analysis, CTW, PUR.

Conferences: 18 - HFES, SFP, ADRIPS, AIPTLF, AFPSA.

Book(s): Stress, 2012.

International collaborations: Washington (USA)

Domain

Human Factors /
Health psychology

Area(s) of research

Behavior modeling

Fields of expertise

Crisis management
Risk perception
Team Management
Team building
Acceptability

Keywords

Crisis management
Stress
Mental load
Social Support
Management
Adaptability

Applicative examples

Crisis management within a Security Operational Center

Contact

laurent.guillet@univ-ubs.fr
+33668402262

LMBA

Laboratoire de Mathématiques
de Bretagne Atlantique

UMR6205 - CNRS/UBO/UBS

UMR 6205

BRITTANY ATLANTIC MATHEMATICS LABORATORY

LMBA

105 members including:
60 Researchers (20 UBS)
25 PhD students (13 UBS)

The LMBA brings together most mathematicians in Western Brittany. The research topics cover a large part of the mathematical fields, from theoretical aspects to the most applied, such as algebraic and differential geometry, mathematical physics, topology and groups; dynamic systems, probability and statistics; control, differential games, numerical analysis and image processing.

3 main themes are organized around teams and seminars:

• Geometry and topology
• Dynamical Systems, Probability
  and Statistics
• Analysis, stochastic phenomena
  and applications

SCIENTIFIC COLLABORATIONS
France : 11 research teams (mathematics, ICT, optics).
International : Numerous research teams (Canada, Germany, Great Britain, United States, China, Colombia, Peru, Brazil, Algeria, Vietnam, Japan, Russia, Spain, Norway).
European Projects : Breuds (exchange between Europe and Brazil) and Portonovo.

INDUSTRIAL PARTNERSHIPS
In France : several companies from various fields (energy, defense, telecommunications, biostatistics, environment).

LINK
To the LMBA website

LMBA
Laboratoire de Mathématiques
de Bretagne Atlantique
UMR6205 – CNRS/UBO/UBS

Brittany Atlantic Mathematics
Laboratory

Gilles DURRIEU

Full Professor
Applied Mathematics and Statistics

" "

From observation
to prediction

" "

BIO

Gilles Durrieu obtained his Applied Mathematics PhD in 1997 at University of Bordeaux, then did a post-doctorate under a European contract. He was Associate Professor for eleven years at University of Bordeaux before joining University Bretagne Sud as Full Professor in 2010. Multidisciplinarity and international collaborations characterize his research in the fields of multidimensional statistics and the modeling of complex systems. His work focuses on questions related to ecology (global warming, biodiversity), but also to the medical field with studies on the human genome and the location of genes responsible for complex pathologies. His research also involves the development of models associated with data sciences and artificial intelligence for the prediction and management of cyber- attacks.

Link to full biography

Core data

PhD students: 8

Post-doctoral fellows: 3

Publications: 50 – Journal of Applied Statistics, Open Journal of Statistics, Statistical Inference for Stochastic Processes, Extremes, Journal of American Statistical Association, Environmetrics, etc.

Conferences: 105 (including 45 as invited guest) - SERA Brisbane (Australia), Statistics Days (Montpellier, Lille, Rennes, Brussels, Toulouse), French Mathematical Society (Vietnam), 20th International Conference on Computational Statistics (Cyprus), University of Toronto, 23rd International Biometric Conference, Genetic Analysis Workshop GAW15 (USA), etc.

Book(s): Handbook of Quantile Regression (Chapman & Hall /CRC Handbooks of Modern Statistical Methods 2017).

Award(s): Scientific excellence allowances and doctoral and research supervision grants - since 2006.

International collaborations: University of Toronto (Canada), University of New Caledonia, University of Pittsburgh, University of Rochester, Rockefeller and Columbia Universities - New York (USA), Santiago University (Chile), etc.

25% of the researcher's activity devoted to cybersecurity

Focus :
Research ☐
Application field ☒

Area(s) of research

Applied mathematics

Fields of expertise

Statistical learning, nonparametric estimation, stochastic process, functional regression, extreme value theory, predictive models.

Applicative examples

Monitoring water quality based on animal behavior.
Development of mathematical indicators for ecological restoration of nickel mining sites (New Caledonia).
Modeling of defense strategies after a cyber-attack.

Responsabilities

- Director of LMBA-UBS (2015-2016)
- Director of the Mathematics, Computer Science and Statistics Department (2012-2016)
- Director of the Mathematics and Statistics division (2015-2017 and 2020 - *)
- Head of the Dynamic Systems, Probability and Statistics team at LMBA (2012-2015)
- In charge of training courses (Bachelor, Master and Engineering Master's Degree Curriculum) since 2010
- Head of LMBA's Data Science research axis (2019 - *)
- Elected member of the UBS and the University of New Caledonia (2017-2019) board of directors
- Elected member of the UBS Research Committee (2012-2016) / Education and University Life (since 2020)
- Ambition EcoDep project - Paris Seine initiative of Excellence (2020-2024)
- Responsible for the modeling part of the RecoSynth project (CNRT project 2015-2017)

Domain

Statistics

Keywords

Data science
Data analysis
Modelization
Extreme values
Prediction

Contact

gilles.durrieu@univ-ubs.fr
+33 (0) 2 97 01 71 78

Lab-LEX
Laboratoire de recherche en droit EA 7480

- **EA (RESEARCH HOST TEAM) 7480**
- **LAW RESEARCH LABORATORY**

LAB-*LEX*

55 members including:
49 Researchers (18 UBS)
36 PhD students (11 UBS)

The Lab-LEX laboratory focuses its research on 3 major themes:

• **Vulnerability:** understanding the concept of vulnerability applied to natural persons, legal persons, structures and spaces, and the legal instruments of vulnerability in the various fields of private law, public law, European law and fundamental rights
• **Governance:** different meanings analysis of the term territories governance (coastline, decentralization and deconcentration), European governance, corporate governance (associations, cooperatives, foundations), evolution of employment in the public and private sectors
• **Litigation:** research on the renewal of the judge's role (through litigation strategies, jurisdictional policies, modalities of legal action, understanding and enforcement of judicial decisions); the concept of risk, prevention and amicable treatment of risks; alternative dispute resolution methods.

SCIENTIFIC COLLABORATIONS
France : notably the House of Human Sciences in Brittany (MSHB).
International : several universities (Italy, Spain, Canada, Vietnam, Mexico, Colombia, Brazil, Costa Rica, Canada).

PARTNERSHIPS WITH THE PROFESSIONAL WORLD
Companies, local authorities and administrations, hospitals, associations, courts and judiciary, bar associations, notaries, asset managers.

LINK
To the Lab-*LEX* website

Michel SEJEAN

Full Professor
Private Law and Criminal Sciences

*" Jurists must bring their
added-value to society progress
by promoting technologies that
safeguard freedom instead
of monitoring it ,,*

BIO

A graduate of the Higher Institute of Interpretation and Translation (ISIT, Paris), Michel Sejean pursued in parallel law studies and chose University Bretagne Sud in 2013 after successfully passing the "agrégation" competitive exam in private law and criminal sciences. He develops research in comparative civil law and participates in several translations of civil and commercial codes both in France and the United States. Since 2018 he has undertaken to train in cybersecurity, a discipline little known to jurists. He obtained a HarvardX certification and was selected as auditor on digital sovereignty and cybersecurity to the Institute of Higher National Defense Studies (IHEDN) and the National Institute of Higher Security and Justice Studies (INHESJ). He sits at the UBS Cybersecurity Center Executive Bureau and is a member of the UBS Foundation's Chair of Cybersecurity for Major Public Events.

Link to full biography

Core data

PhD students: 4

Publications: 27– La Gazette du Palais, Trans Europe Experts, Recueil Dalloz, Revue Lamy Droit civil, Bulletin Joly Sociétés, La Semaine juridique, Sécurité&Défense, Revue internationale de droit comparé, etc.

Book(s): 3 - The trilingual French-English-Arabic Civil Code, LexisNexis 2020 ; L'Europe de la cybersécurité, Trans Europe Experts 2019 ; L'index de la sécurité juridique/ The Index of Legal Certainty, Dalloz 2018.

International collaborations: Louisiana State University, Baton Rouge - 2021 (USA)

Domain

Digital law

Area(s) of research

Information Systems Security Law
Cybercrime Law
National Cyber Defence Law

Fields of expertise

Domestic, European and international cybersecurity legislation

Responsibilities

Board Member of the UBS Cybersecurity Center
Board Member of the UBS Foundation's Chair of Cybersecurity for Major Public Events

Keywords

Cyber risk insurance
Territory cybersecurity
Numeric identity
Digital privacy
Digital sovereignty

Contact

michel.sejean@univ-ubs.fr
+33 (0)6 62 84 47 45

LEGO
Laboratoire d'économie
et de gestion de l'Ouest

● **EA 2652**

● **WESTERN FRANCE ECONOMICS AND MANAGEMENT LABORATORY**

LEGO

118 members including:
93 Researchers (34 UBS)
25 PhD students (7 UBS)

The Western France Economics and Management Laboratory is composed of a team of multidisciplinary researchers specializing in economic and management sciences whose vocation is to help create, develop and disseminate knowledge.

INDUSTRIAL COLLABORATIONS
Collaboration with Enedis: SOLENN project (Solidarity, Energies, Innovation).

RESEARCH CONTRACTS
- **FOOD SUSTAINABILITY:** development of sustainable food practices within a territory
- **COAGUL:** COmmunities, Activity, reGULations
- **COMPNUM:** digital skills and subjective employability of trainees and work-study students from higher education at the end of their studies
- **NUTRICHIC:** Food for the elderly at the Cornouaille Hospital Center (Quimper)
- **SESAME:** study on the «Relational Sesame» tool
- **TEXSENS:** consumer perception, meaning and use of food texture

SCIENTIFIC RESEARCH GROUP
M@rsouin (Armorican Mole for Research on Information Society and Internet Uses).

LINK
To the LEGO website

Vanessa SERRET

Full Professor
Management Sciences - Organizational Finance & Corporate Governance

" Cybersecurity cannot be limited to its technical aspects. It is important to have a multidisciplinary approach (political, economic, managerial, legal and technological) to cybersecurity in general "

BIO

Vanessa Serret joined University Bretagne Sud as Associate Professor after completing a thesis in portfolio management at the Institute of Business Administration (University of Aix-Marseille, 2002). Between 2000 and 2017, she was invited on several occasions to Sherbrooke University (Canada) where her research focused on shareholder democracy, then to HEC Montréal in 2017 to work on the functioning of corporate boards of directors. Her work on organizations' governance and societal responsibility brings her to approach cybersecurity from the management and structuring of organizations' point of view. To prevent threats and their consequences, she calls for building a high-performance organizational culture and a responsive analysis to the cost of cyber-attacks. In September 2020, she is appointed Full Professor at the University of Lorraine Institute of Business Administrations.

Link to full biography

Core data

PhD students: 3

Publications: 30 – Management international, Revue Française de Gestion, Finance Contrôle Stratégie, Revue de Gestion des Ressources Humaines, Corporate Social Responsibility and Environnemental Management, International Journal of Business and Management, Revue Française de Gouvernance d'Entreprise, etc.

Conferences: 45 – CIG, AFC, EURAM, AFFI, ADERSE, RIODD, etc.

Book(s) : 3 – Finance DSCG 2 (Dunod, 2019) ; Analyse Financière (Hachette, 2011) ; Principes d'Analyse Financière (2009).

Award(s): Best Paper Award EURAM 2015.

International collaborations: Sherbrooke University (Canada), HEC Montreal (Canada), Monastir University (Tunisia), Georgetown University (USA).

Area(s) of research

Finance and organizational governance.

Fields of expertise

Shareholder activism
Executive compensation
Shareholder democracy
Functioning of boards of directors
Impact of cyber-attacks on financial markets

Applicative examples

Board of Directors' response to shareholders regarding cyber risk management
Assessment of value destruction costs

Responsibilities

- Elected member of the Doctoral School of Economics & Management Council (2017-2020)
- Elected member of the research commission (2017-2020)
- Head of axis of the IREA laboratory (Research Institute of Businesses and Administrations, 2014-2016)
- Member of the Board of the UBS Research House (2007-2010)

Domain

Cyber risk governance

Keywords

Cyber-attacks cost
Cyber risk management

Contact

vanessa.serret@univ-lorraine.fr
+33 (0)6 63 03 88 72

Christine PETR

Full Professor
Marketing and digital usages

"

Whoever pretends to research
must never stop learning

"

BIO

Starting from her thesis defended in 1998 at Rennes 1 University, Christine Petr has questioned consumers' behavior in the worlds of tourism, art, and culture. In 2005, she joined forces with GIS (scientific interest group) Marsouin on the digital usages issue and she has been particularly invested in E-tourism. As a teacher-researcher, Christine Petr has worked in various institutions (IUT Saint Brieuc, IAE Rennes, IAE Tours, SciencesPo Rennes), before joining University Bretagne Sud in 2015. She devotes her research to the effects and evolution of individual behavior in the utilization of digital tools. Since 2018, her research themes have remained devoted to the art and tourism sectors but focus more specifically on the link between sensitivity to personal data protection and digital hygiene, which involves cybersecurity.

Link to full biography

Core data

PhD students: 7

Post-doctoral fellows: 1

Publications: 32 – IJAM, Management & Avenir, JMT, Tourism Management, Arts Marketing, RAM, DM, etc.

Conferences: 94 – IMTC, AFM, HTSF, AIMAC, etc.

Book(s): 7 books, 23 chapters – Le marketing du Tourisme (Dunod, 2010.2015), L'Accueil international: concepts et cas de management (De Boeck, 2011), 10 cas de Communication (Dunod, 2015.2020), etc.

Award(s): Best Paper Award JTTM 2009.

Videography: Experiencing Contemporary Arts: A Reexamination of Fun, Feeling and Fantasy, 2015.

International collaborations: Udayana University - Bali (Indonesia), La Sagesse University - Beirut (Lebanon).

Area(s) of research

Digital Usage Analyses

Fields of expertise

Types and degrees of digital practice.
Digital transformation.
Perceived sensitivity of individual data.
User empowerment.

Applicative examples

Raising users' awareness towards their personal data protection.
Users involvement in data sharing to improve collective benefit.

Responsibilities

- Educational Manager since 2019 for the third year's Sales Marketing Bachelor.
- Member of various UBS committees (Research, CAC, CFVU ...) since 2015.
- Member of the UBS Scientific Committee of the Archipel Institute, Research Institute on the Sea and Coast (since 2019).
- Director of the IREA-LEGO Vannes Laboratory (2015-2018).
- Responsible for research projects on digital uses (since 2005).
- Scientific Council of GIS Marsouin (www.marsouin.org)
- Reviewer of international journals and congresses.
- GIT AFM (thematic interest group - French marketing association) Co-leader - Innovations and Marketing of Culture and Tourism.

Domain

Consumers

Keywords

Uses
Impacts
Appropriation
Addictions
Deviations
Empowerment
Trust
Marketing Information

Contact

christine.petr@univ-ubs.fr
+33 (0)6 41 97 09 59

# :FOCUS ON THREE CYBERSECURITY PHD STUDENTS AT UBS

Benabidallah RAOUNAK joined IRISA 4 years ago for a thesis on automatic identification of risk situations in software systems. After a master's degree in Artificial Intelligence at the Houari Boumediene University of Science and Technology in Algiers, she has put her skills at the service of cybersecurity. Thanks to AI technologies, it's a question of highlighting the hazardous code areas for developers' benefit. Even if her profile is highly sought after in the industry world, it's to research and teaching she wishes to devote herself. Fully integrated in the research team, she also strengthened her experience by teaching computer science students at bachelor's level and supervising projects and trainees.

Nan MESSE joined IRISA 3 years ago. Her PhD (funded by the French Procurement Agency - DGA) initially focused on security of systems of systems using model-driven engineering. This gradually led her to offer protection assistance to software architects (who are not necessarily security experts) when designing systems of systems. A Chinese student, she arrived in France in 2013 and completed a master's degree in SeCReTS (Security of Content, Networks, Telecommunications and Systems) at UVSQ (University Pris-Saclay). At UBS where she was charmed by the location and team, she also supervised projects and internships while teaching simultaneously at bachelor level, at the UBS Technological Institute and the French Military Academy Saint-Cyr. She wishes to pursue in research and education around security and software engineering.

Timo ZIJLSTRA, a 27-year-old Dutch student, is concluding his thesis at University Bretagne Sud around secure hardware accelerators implementation for post-quantum cryptography. He arrived in France in 2015, after a mathematics bachelor's degree at University of Groningen: his taste for algebra led him to cryptography via the Master's degree in mathematics and cryptography in Rennes. He wrote his PhD (co-funded by the Brittany Region and DGA) under the supervision of Arnaud Tisserand and as a CNRS doctoral student in Lab-STICC, a CNRS-UBS joint research unit. For him, the challenges of cryptography are essential to anticipate tomorrow's algorithms security. Recruited in Bordeaux, Timo has chosen to bring his expertise to the corporate world.

PhD students pictures : Roselyne Belz
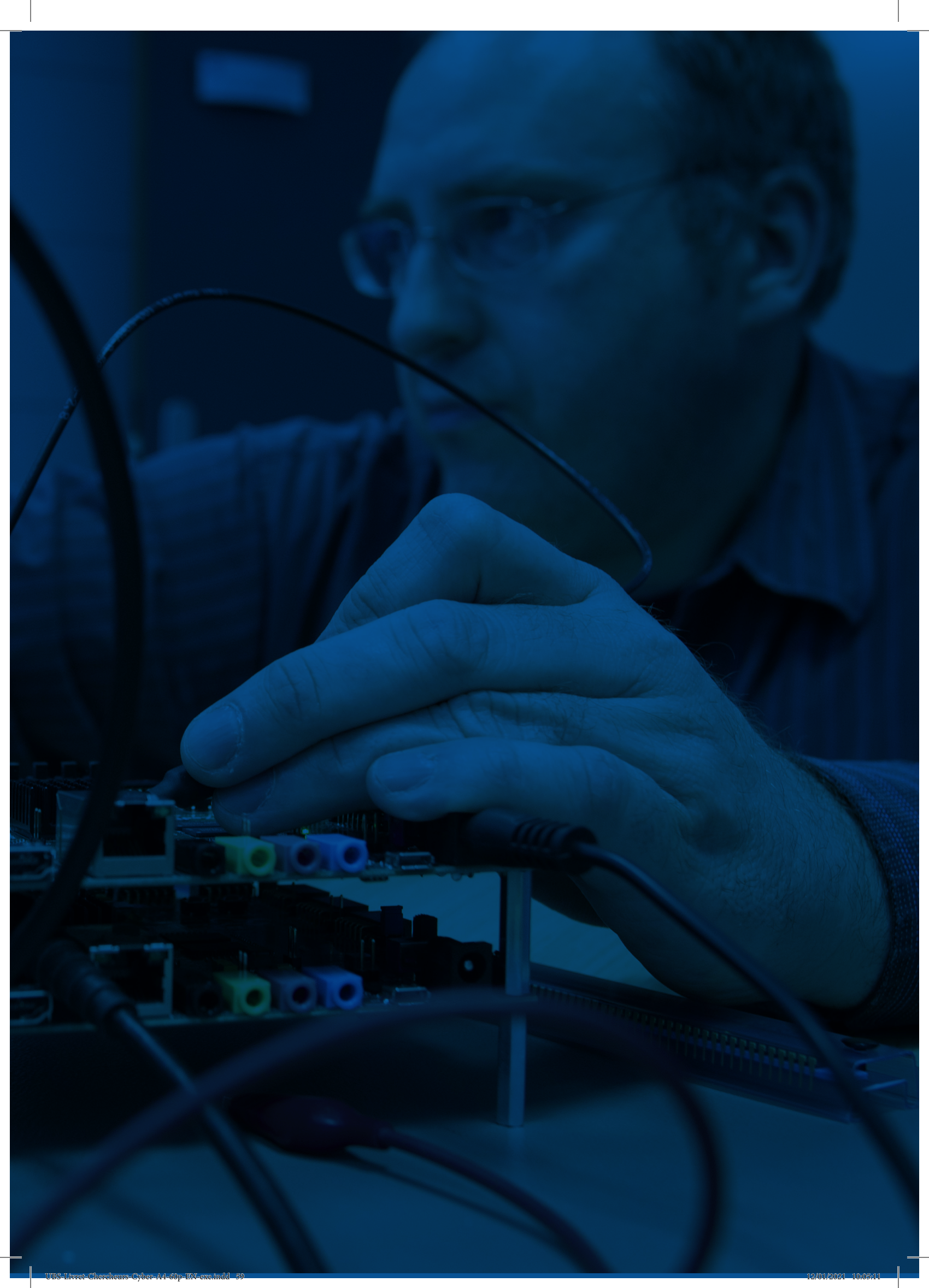
THEY SUPPORT US

PEDAGOGICAL AND RESEARCH ACTORS

CONTACT

Cyber Security Center

Campus de Tohannic
Rue Yves Mainguy BP 573
56017 VANNES CEDEX
www-cybersecuritycenter.univ-ubs.fr
Tel. +33 (0)2 97 48 50 57
cyber@univ-ubs.fr