#EURECOM

EURECOM
Sophia Antipolis

A to Z

COMMUNICATION SYSTEMS DEPARTMENT

DATA SCIENCE DEPARTMENT

DIGITAL SECURITY DEPARTMENT

KEYWORDS

Radio transmission, communication and information theory, 6G networks, machine-to-machine communications, cyberphysical systems, autonomous mobility, connected robotics, decentralized networks, opensource 5G platforms.

KEYWORDS

Computational Statistics, Statistical Inference, Explainable Artificial Intelligence, Knowledge Graphs, Semantic Embeddings and Representations, Data Base Systems on Modern Hardware, Calibration of Complex Simulation Engines, Statistical Genomics, Medical Imaging and AI for Life and Environmental Sciences, AI for Autonomous Systems.

KEYWORDS

Embedded systems / IoT/ mobile/ web / network/ imaging / security and privacy, malware /threats / analysis, intrusion detection, digital forensics, vulnerability discovery, reverse engineering, applied cryptography, privacy preserving / verifiable / deep learning, Image/ Video/Voice/ biometrics, speaker/ voice/ recognition, speaker diarization, acoustic signal processing, anti-spoofing / presentation attack detection, cryto-biometrics.

Communications systems are facing an unprecedented revolution. The emergence of connected cyberphysical and robotical systems coming along side other internet of things applications requires the rethinking of future wireless networks for beyond 5G. In order to provide services to a large population of broadband users *and* machines, the redesign of communications strategies, spectrum sharing policies, Qos control and eventually the overall mobile architecture must be carried out, leveraging the research skills offered in the Communication Systems Department from theory, algorithms, to platform and prototype developments.

The department aims at consolidating our research and teaching activities in the domain of Data Science, with the goal of expanding our application domains beyond the historical telecommunications field. Our work is defined through an interdisciplinary approach to research, merging contributions from computer science, machine learning and statistics, and addressing numerous applied problems. Our research program is centered on the disciplines to semantically integrate and enrich data, to model and understand data, to design and analyze scalable computational approaches to machine learning and complex system simulations, and to build systems that allow storing and processing vast amounts of data. The main research lines underpinning our academic and industrial projects involve the development of a solid foundation of systems and theoretical tools to interact with manipulate and model data.

The Digital Security department covers a broad range of cyber security research related topics. These include various forms of voice and image analysis to perform reliable and attack tolerant biometric treatments. The department members also have a strong expertise in various applied cryptography areas such as, for instance, privacy preserving techniques for machine learning. Last but not least, the department has a strong system security focus from the hardware/firmware level up to the web applications level, including also topics such as network and mobile security, forensics or malware analysis.

Intro
by the Director

Ulrich Finger
Director of EURECOM

EURECOM's mission involves research and VISIBILITY in communication systems, with special emphasis on mobile communications, multimedia and networking & security.

The field of communication systems has been developing at a breathtaking pace, which poses numerous technical and economical challenges such as scalability, reduced power consumption and increased capacity, or time to market.

EURECOM addresses these challenges in both its teaching and research: Many research projects are carried out jointly with other academic or industrial partners.

Our research results enrich our teaching and many of the course projects carried out by our students are part of ongoing research efforts. From the very beginning, EURECOM has been strongly committed to excellence in teaching and research.

A very important factor in reaching this level of excellence resides in the hiring of a strong faculty which would attract top students and vice versa.

EURECOM's excellence is recognized on the international stage: we received the prestigious.

DATA SCIENCE DEPARTMENT

RAJA **APPUSWAMY**

ASSISTANT PROFESSOR

JOIGNED EURECOM IN 2018

INDIA

Molecular information storage
Cold data management
Heterogeneous, parallel database engines
DNA Storage

BIOGRAPHY

Raja Appuswamy is an Assistant Professor in the Data Science Department. He is also a Visiting Professor at EPFL. Previously, he worked as a Visiting Researcher in the Systems and Networking group at Microsoft Research, Cambridge, and as a Software Development Engineer in the Windows 7 kernel team at Microsoft, Redmond.

He received his PhD in Computer Science from the Vrije Universiteit, Amsterdam, where he worked on designing and implementing a new storage stack for the MINIX 3 microkernel operating system. He also holds dual Masters degrees in Computer Science and Agricultural Engineering from the University of Florida.

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LATEST RESEARCH

- Operating systems
- Storage systems
- Database systems
- Distributed systems

VISIBILITY

A Biologically constrained encoding solution for long-term storage of images onto synthetic DNA
EUSIPCO 2019 (Best student paper award)

OligoArchive: Using DNA in the DBMS storage hierarchy
CIDR 2019

FULL PROFILE
www.rajaappuswamy.com

DIGITAL SECURITY DEPARTMENT

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DAVIDE
BALZAROTTI

PROFESSOR, HEAD OF DEPARTMENT

JOIGNED EURECOM IN 2009

ITALY

Software Development Methodologies
Cybercrime and Computer Forensics

BIOGRAPHY

Davide Balzarotti is a professor in the Digital Security Department with a special interest in system security, and in particular the areas of binary and malware analysis, reverse engineering, computer forensics, and web security.

He earned his Ph.D. in Computer Engineering from Politecnico di Milano in 2006 and was a postdoctoral researcher in computer security at the University of California, Santa Barbara (2006 – 2008.)

He has published over 100 papers to date.

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LATEST RESEARCH

- Reverse Engineering
- Memory Forensics
- Advanced malware analysis
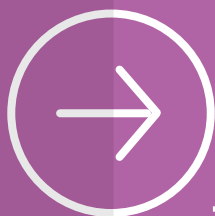- Web security

VISIBILITY

- ERC Consolidator Grant for his project BITCRUMPS (2017)
- Program committee member of numerous international conferences
- Chaired RAID 2012 and EUROSEC 2014.
- Best Paper Award for the article "Attacks landscape in the dark side of the web" (SAC 2017)

FULL PROFILE
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DIGITAL SECURITY DEPARTMENT

JEAN-LUC DUGELAY

PROFESSOR

JOIGNED EURECOM IN 1993

FRANCE

Imaging for Security Applications Watermarking & BIOGRAPHYmetrics
Image & Video Compression and Processing

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BIOGRAPHY

Jean-Luc DUGELAY is a professor in the Digital Security Department with a special interest in multimedia image processing, in particular activities in security (image forensics, BIOGRAPHYmetrics and video surveillance, mini drones), and facial image processing.

He obtained his PhD in Information Technology from the University of Rennes in 1992, and worked for France Telecom Research prior to joining EURECOM. A prolific author and sought-after conference speaker, he has positioned himself as one of the leading international experts in the field of multimedia security and has published over 380 papers as well as numerous books and articles.

LATEST RESEARCH

- Unmanned aerial vehicles
- Facial Image Analysis
- Biometrics and Video surveillance
- Image Forensics

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VISIBILITY

- Fellow member of IEEE and IAPR
- Elected member of the EURASIP BoG and Associate editor of several international journals (IEEE Trans. on IP, IEEE Trans. on MM)
- Founding Editor-in-Chief of the EURASIP journal on Image and Video Processing (SpringerOpen).
- Co-author of several conference articles that received an IEEE award in 011, 2012, 2013 and 2016.
- Co-organizer of the 4th IEEE International Conference on Multimedia Signal Processing held in Cannes, 2001, and the Multimodal User Authentication held in Santa Barbara, 2003.
- Served as general co-chair of the 2015 IEEE ICIP (Québec City) and EURASIP EUSIPCO (Nice).
- ITEA Award of Excellence in the categories "Business impact" & "Innovation" (July 2018)
- Best Paper Award and 1st Place Award for their paper "Apparent Age Estimation from Face Images Combining General and Children Specialized Deep Learning Models" (CVPRW 2016)
- EAB BIOGRAPHYmetrics Research and Industry Award for the Journal article "Multimodal authentication on Smartphones: combining iris and sensor recognition for a double check of user identity" (2016).

FULL PROFILE
www.eurecom.fr/~dugelay/

COMMUNICATION SYSTEMS DEPARTMENT

PETROS
ELIA
PROFESSOR

JOIGNED EURECOM IN 2008

Mobile communication techniques
Wireless networks
BIOGRAPHYmetrics

CYPRUS

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BIOGRAPHY

Petros Elia is a professor in the Communications Systems department with a special interest in multiuser networks, limited and delayed feedback, performance complexity tradeoffs, and soft-BIOGRAPHYmetrics and computer vision. His research focuses mainly on wireless communications, information theory and coding theory, and lately on the intersection of caching and advanced wireless communications.

He earned his B.S. in Electrical Engineering at the Illinois Institute of Technology, Chicago, and holds a Masters and a Ph.D. in Electrical Engineering from the University of Southern California, Los Angeles. Prior to joining EURECOM, he worked on signal processing projects for Procter & Gamble, and was a postdoctoral scholar at the University of California, San Diego as well as a senior researcher at FTW Vienna. He has published over 110 papers to date.

LATEST RESEARCH

- Information Theory
- Coding Theory
- Caching
- Distributed Computing
- Wireless Networks
- Biometrics

VISIBILITY

- ERC Consolidator Grant for the project DUALITY (2017-2022)
- ANR Jeune Chercheur for the project ECOLOGICAL-BITS-AND-FLOPS (2015-2019)

FULL PROFILE
www.eurecom.fr/~elia/

DIGITAL SECURITY DEPARTMENT

NICHOLAS EVANS
PROFESSOR

JOIGNED EURECOM IN 2007

Speech and Audio Processing Essential Mathematical Methods for Engineers

🇬🇧 **ENGLAND**

BIOGRAPHY

Nicholas Evans is a professor in the Digital Security department with special interest in speaker recognition, anti-spoofing, presentation attack detection, privacy preservation, and BIOGRAPHYmetrics. He has been actively involved in a number of collaborative research projects at local, na¬tional, European and international levels with SMEs, multinationals and government agencies. His current activities in acoustic echo cancellation and speaker diarization are supported by one of the world's leading industrials in embedded mobile solutions.

Nicholas Evans received a M.Eng (Hons) in Electronics and Computing Science and later earned his Ph.D. in Electrical and Electronic Engineering at USW University of Wales Swansea. From 2002-06 Nicholas was Assistant Professor at the same teaching courses in Communications, and he remained an honorary lecturer until 2009. In 2006 he joined the Laboratoire Informatique d'Avignon at the Université d'Avignon where he taught courses in Image Processing and Digital Communications. He has published over 220 papers to date.

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LATEST RESEARCH

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- Speaker recognition
- Anti-spoofing
- Presentation attack detection
- Privacy preservation
- Biometrics

VISIBILITY

- Co-founder of the ASVspoof initiative, the Automatic Speaker Verification Spoofing and Countermeasures Challenge
- Best System Award Iberspeech 2018 Albayzin Challenges - Multimodal Diarization (IBERSPEECH 2018)
- Best System Award IberSpeech 2018 Albayzin Challenges Speaker Diarization Open Condition (IBERSPEECH 2018)
- Best Albayzin Evaluation System Award - Speaker Diarization evaluation (ex-aequo) for the paper "EURECOM submission to the Albayzin 2016 speaker diarization evaluation" (IBERSPEECH 2016
- Handbook of BIOGRAPHYmetric anti-spoofing : Presentation attack detection

FULL PROFILE
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DIGITAL SECURITY DEPARTMENT

ANTONIO **FAONIO**

ASSISTANT PROFESSOR

JOIGNED EURECOM IN 2020

🇮🇹 **ITALY**

Mobile systems security & privacy
Malware analysis
Vulnerability detection

BIOGRAPHY

Antonio Faonio is an assistant professor in the Digital Security Deperment with special interest in Cryptog-raphy.

Previously, Antonio Faonio was a postdoctoral researcher at IMDEA Software Institute, Madrid, from 2017 to 2020 where he had the pleasure to work with with research group of prof. Dario Fiore, and postdoctoral researcher at Aarhus University, Aarhus from 2015 to 2016 in the research group of Ivan Damgaard.

Antonio Faonio received his Ph.D. in Computer Science at "Sapienza" Univ. of Rome. His advisor was prof. Giuseppe Ateniese.

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LATEST RESEARCH

- Non-Malleable Secret Sharing Schemes
- Efficient Zero-Knowledge Proofs Systems
- Pairing-Based Cryptography

VISIBILITY

• Lead together with Prof. Dario Fiore a project for adoption of zero-knowledge proofs for one of the major banks if Spain: https://noticiasbancarias.com/bancos/10/05/2020/bbva-y-el-instituto-imdea-software-investigan-tecnicas-de-criptografia-avanzada/211644.html (in English https://noticiasbancarias.com/bancos/10/05/2020/bbva-y-el-instituto-imdea-software-investigan-tecnicas-de-criptografia-avanzada/211644.html)

FULL PROFILE
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DIGITAL SECURITY DEPARTMENT

MAURIZIO **FILIPPONE**

PROFESSOR

JOIGNED EURECOM IN 2015

Probabilistic Machine Learning
Computational Statistics
Bayesian Inference
Gaussian Processes

ITALY

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BIOGRAPHY

Maurizio Filippone is a professor in the Data Science department with a special interest in the development of practical and scalable Bayesian inference methods for Gaussian Process-based statistical models; the emulation and calibration of large scale physical models such as climate, earthquake and tsunami models; statistical methods for early stage diagnosis of neurological disorders based on neuroimaging data; and Bayesian inference in mechanistic models applied to systems xxxxx.

He earned his Master's degree in Physics, and a Ph.D. in Computer Science from the University of Genoa, Italy. Prior to joining EURECOM, Dr Filippone was a Lecturer in the School of Computing Science at the University of Glasgow, and before that, a research associate at the universities of Sheffield, Glasgow, and London. He has published over 100 papers to date.

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LATEST RESEARCH

- Probabilistic Machine Learning
- Computational Statistics
- Bayesian Inference
- Gaussian Processes

VISIBILITY

- JCJC Grant from ANRT : "ECO-ML: Rethinking Modern Machine Learning Tools for a New Generation of Low-Power Large-Scale Modeling Systems" (2019-2021)
- AXA Chair position from the AXA Research Fund (2016-2022)

FULL PROFILE
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DIGITAL SECURITY DEPARTMENT

AURÉLIEN
FRANCILLON

PROFESSOR

JOIGNED EURECOM IN 2011

FRANCE

Embedded systems security
Architecture support for security
Wireless and wired network security and privacy

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Phone : +33 (0)4 93 00 81 19

BIOGRAPHY

Aurélien Francillon is a professor in the Digital Security department with a special interest in topics such as software security, architecture support for security, wireless and wired network security and privacy to ensure the security of embedded devices from low-end microcontrollers to high-end smartphones. He is especially interested in the boundaries between software and hardware, a frequently neglected area of security.

He earned his Ph.D. in Computer Science from INRIA/INP Grenoble (2009) and subsequently worked as a postdoctoral researcher in computer security at the Federal Institute of Technology Zurich (ETH Zurich, Switzerland. Prior to his PhD, he was working as an expert engineer at INRIA in cooperation with ST Microelectronics. He has published over 55 papers to date.

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LATEST RESEARCH

- Embedded systems security
- Architecture support for security
- Wireless and wired network security and privacy

VISIBILITY

- Third prize at the CSAW Europe applied research competition 2018 for "Screaming Channels"
- Best Paper Award for the article : "C5: Cross-cores cache covert channel" (DIMVA 2015)
- Best Student Paper Award for the article "Implementation and implications of a stealth hard-drive backdoor" (ACSAC 2013)
- Prix de Thèse INP Grenoble (2010)
- Involved in cooperative research with many companies through publicly funded projects (NEC, NXP, Arkoon, etc.) or direct partnerships (Google, Technicolor,…).
- Co-received a Best Student Paper Award at the ACSAC 2013 for his article on "Implementation and Implications of a Stealth Hard-Drive Backdoor".
- Author of several publications in renowned conferences (CCS, NDSS, WWW, etc.)
- Reviewer for more than 40 conferences and journals
- Member of numerous program committees (Wisec, ACNS, RAID, SSTIC)
- Co-chaired the CARDIS conference in 2013 and has since joined its Steering Committee.

FULL PROFILE

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DIGITAL SECURITY DEPARTMENT

DAVID GESBERT

PROFESSOR, HEAD OF DEPARTMENT

JOIGNED EURECOM IN 2003

FRANCE

Statistical signal processing
Advanced topics for wireless communications
Connected robotics

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BIOGRAPHY

David Gesbert is a professor in the Communications System department with a special interest in advanced mobile networks, signal processing and communication theory, information theory, machine learning for communications, and connected robotics.

He obtained his Ph.D degree from ENST (Ecole Nationale Supérieure des Télécommunications), Paris, France, and subsequently worked as a postdoctoral student at the Smart Antenna Research Group of the Information Systems Laboratory, Stanford University. From 1993 to 1997, he was with France Telecom Research, Paris, where he was involved in the development and study of receiver algorithms for digital radio communications systems.

He was a member of the founding team of Wireless Inc, San Jose, California (initially known as Gigabit Wireless), a startup company pioneering the first high-speed wireless internet access networks using MIMO and OFDM. The technology was acquired by Intel in 2002 and is now featured as part of the WiMax 802.16 standard. Prior to joining EURECOM, he was an adjunct professor at the University of Oslo. He has published over 400 papers to date.

LATEST RESEARCH

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- Advanced mobile networks
- Signal processing and communication theory
- Information theory
- Machine learning for communications
- Connected robotics

VISIBILITY

- Best Paper Award for the article "Performance of mobile networks with UAVs: Can flying base stations substitute ultra-dense small cells?" (EW 2017)
- ERC Advanced Grant for the project PERFUME (2015)
- Thomson Reuters list of "The World's Most Influential Scientific Minds for 2014"
- Signal Processing Society Signal Magazine Best Paper Award for the article "Shifting the MIMO paradigm" (2012)
- Fellow Distinction from IEEE (2011)
- Best Tutorial Paper for the article "Multi-cell MIMO cooperative networks : A new look at interference" (2010)
- Best Paper (Young Author) Award for Signal Proc. Society journals (2005)
- Best Tutorial Paper Award for the article "From Theory to Practice: An Overview of Space-Time Coded MIMO Wireless Systems" 2003 JSAC (Journal on Selected Areas in Communications) (2004)

FULL PROFILE
www.eurecom.fr/~gesbert

DIGITAL SECURITY DEPARTMENT

JÉRÔME
HÄRRI
PROFESSOR

JOIGNED EURECOM IN 2010

Wireless Access Technologies
Infrastructure and
Transportation Planning
Emission and Traffic Efficiency

SWITZERLAND

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BIOGRAPHY

Jérôme Härri is a professor in the Communications System department with a special interest in Mobility and Transport Modeling , Positioning and Navigation, and Control System Optimization.

He obtained both his M.Sc and his Dr. ès Sc. (PhD) from the Swiss Institute of Technology, Lausanne (EPFL), Switzerland. He has led the Cooperative Automated Transport Systems (CATS) team in the Networked Systems group at the Department of Communication Systems in EURECOM since 2010. Prior to that, he worked at the Institute of Telematics of the Karlsruhe Institute of Technology (KIT), Germany, was a visiting researcher at the Network Research Lab (NRL) at the University of California at Los Angeles (UCLA), and a Guest Researcher at the National Institute of Technologies (NIST), Washington DC, USA. He has published over 170 papers to date.

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LATEST RESEARCH

- Mobile Wireless Systems
- Mobility and Transport Modeling
- Positioning and Navigation
- Control System Optimization

VISIBILITY

- Best Poster Award for the poster "Accounting for localization errors in a mixed-vehicle centralized control system" (MFTS 2018)
- Best Student Paper Award for the article "Cooperative localization in GNSS-aided VANETs with accurate IR-UWB range measurements" (WPNC 2016)
- Best Poster Award for the poster "Mixed traffic flow with 2-wheelers: Macroscopic modeling and analysis" (BMW EURECOM TUM Summer School 2016)
- Best Poster Award for the poster "Tweaking vehicular safety communications" (BMW EURECOM TUM Summer School 2013)

FULL PROFILE
www.eurecom.fr/~haerri/

COMMUNICATION SYSTEMS DEPARTMENT

FLORIAN
KALTENBERGER

PROFESSOR

JOIGNED EURECOM IN 2007

AUSTRIA

Software defined radio
OpenAirInterface
5G radio access

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BIOGRAPHY

Florian Kaltenberger is an assistant professor in the Communications Systems department with a special interest in signal processing for wireless communications, MIMO communication systems, receiver design and implementation, MIMO channel modeling and simulation, and hardware implementation issues.

He received his Diploma degree (Dipl.-Ing.) and his PhD both in Technical Mathematics (with distinction) from the Vienna University of Technology. He started his career as a junior researcher in the wireless communications group at Austrian Research Centers GmbH, where he was working on the development of low-complexity smart antenna and MIMO algorithms as well as on the ARC SmartSim real-time hardware channel simulator. He joined EURECOM as a post-doctoral research engineer in 2007 and has been teaching since 2011. He has published over 130 papers to date.

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LATEST RESEARCH

- Software defined radio, OpenAirInterface, 5G radio access
- Massive and distributed MIMO, exploitation of channel reciprocity

VISIBILITY

- Member of the team managing the Eurecom real-time open-source testbed OpenAirInterface.org.
- Best Booth Award for the project ADEL (EUCNC 2016)
- Neal Shepherd Best propagation Award for the Journal article "Experimental characterization and modeling of outdoor-to-indoor and indoor-to-indoor distributed channels" (2013)
- EURECOM representative in the COST Action IC1004 on Cooperative Radio Communications for Smart Green Environments.
- Member of the IEEE; conferences and journals reviewer.
- EURECOM's project and work package leader for the SOLDER FP7 project.

FULL PROFILE
www.eurecom.fr/en/people/kaltenberger-florian

DATA SCIENCE DEPARTMENT

MOTONOBU KANAGAWA
ASSISTANT PROFESSOR

JOIGNED EURECOM IN 2019

Machine learning
Gaussian processes
Quadrature or deterministic sampling methods
Probabilistic numerics

JAPAN

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BIOGRAPHY

Motonobu KANAGAWA is an assistant professor in the Data Science department with a special interest in Kernel methods and Gaussian processes, statistics and numerical computation, machine learning for enhancing the power of computer simulation, and applications to real-world problems involving computer simulation models

He earned his M.S. from Nara Institute of Science and Technology, Japan, and a Ph.D. in Statistical Science from the Graduate University for Advanced Studies / The Institute of Statistical Mathematics, Japan. Prior to joining EURECOM in September 2019, he was a research scientist at the Chair for the Methods of Machine Learning at the University of Tübingen and at Max Planck Institute for Intelligent Systems in Germany.

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PUBLICATIONS

- Convergence Guarantees for Adaptive Bayesian Quadrature Methods (2019)

- Convergence Analysis of Deterministic Kernel-based Quadrature Rules in Misspecified Settings (2019)

- Kernel Recursive ABC: Point Estimation with Intractable Likelihood (2018)

VISIBILITY

- Participation in international conferences

FULL PROFILE

http://www.eurecom.fr/en/people/kanagawa-motonobu

COMMUNICATION SYSTEMS DEPARTMENT

RAYMOND
KNOPP
PROFESSOR

JOIGNED EURECOM IN 2000

FRANCE

Signal Processing Technologies Digital Communication Theory 5G

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BIOGRAPHY

Raymond Knopp is a professor in the Communications Systems department with a special interest in coding, multiple access and two-way transmission techniques in radio communications, software radio architectures and implementation technology, and physical-layer abstraction and emulation architectures for radio networks. He is actively involved in numerous collaborative research projects with industry in the area of wireless communication systems.

He received his B.Eng. (Honours) and a M.Eng. degrees in electrical engineering from McGill University, Montreal, Canada, followed by a PhD in communication systems from the Swiss Federal Institute of Technology Lausanne (EPFL). He was a researcher at EPFL prior to joining EURECOM in 2000. He has published over 300 papers to date.

LATEST RESEARCH

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- Coding
- Multiple access and two-way transmission techniques in radio communications
- Software radio architectures and implementation technology
- Physical-layer abstraction and emulation architectures for radio networks

VISIBILITY

- President of the Open Interface (CSA) Alliance
- IEEE Member for over twenty years
- Member of the technical program com¬mittee of several major IEEE conferences
- Special guest editor for the IEEE Journal of Selected Areas in Communications (Aug. 2004) on the topic of fundamental performance limits of wireless sensor networks

FULL PROFILE
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COMMUNICATION SYSTEMS DEPARTMENT

MARIOS
KOUNTOURIS
PROFESSOR

JOIGNED EURECOM IN 2019

GREECE

Communication theory
Machine learning for wireless communications

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BIOGRAPHY

2015 - 2019: Principal Scientist at the Paris Research Center, Huawei Technologies, France.

2009 - 2016: Assistant & Associate Professor at the Department of Telecommunications, SUPELEC (now CentraleSupelec), France

2014 - 2015: Adjunct Professor at Yonsei University, South Korea.

2008 - 2009: Post-doctoral researcher at the University of Texas at Austin, USA

2004 - 2007: Research Engineer, France Telecom R&D

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LATEST RESEARCH

- Communication theory
- Machine learning for wireless communications
- Low latency networking
- Stochastic modeling and performance analysis

VISIBILITY

- 2020 ERC Consolidator Grant for his project SONATA
- 2016 IEEE ComSoc Communication Theory Technical Committee Early Achievement Award
- 2013 IEEE Communication Society (ComSoc) Outstanding Young Researcher Award for the EMEA Region
- 2014 EURASIP Best Paper Award — EURASIP Journal on Advances in Signal Processing

FULL PROFILE
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COMMUNICATION SYSTEMS DEPARTMENT

ADLEN
KSENTINI
PROFESSOR

JOIGNED EURECOM IN 2016

Multimedia content delivery Network architectures and protocols

ALGERIA

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BIOGRAPHY

Adlen Ksentini is a professor in the Communications Systems department with a special interest in mobile and wireless networks, software defined networking, mobile edge computing, network function virtualization, content delivery networks, and performances evaluation. He has participated in several industrial projects involving Orange, TDF, Thomson Video Networks, IRT BCOM, and NEC Germany.

He received a Master degree (DEA) in networks and multimedia from Université de Versailles, St. Quentin en Yvelines, followed by a Ph.D. in Computer Science from Université de Cergy-Pontoise. He has published over 190 papers to date.

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LATEST RESEARCH

- Mobile and wireless Networks
- Software Defined Networking (SDN)
- Mobile Edge Computing (MEC)
- Network Function Virtualization (NFV)
- Content Delivery Networks (CDN)
- Performances evaluation

VISIBILITY

- Member of the Editorial Board of "IEEE JSAC Network Softwarization", "IEEE Network Magazine", and "IEEE Networking Letters"
- Best Paper Award for the article "Efficient vitual evolved packet core deployment across multiple cloud domains" (WCNC 2018)
- IEEE Fred W. Ellersick Prize for his paper "Cache in the air: exploiting content caching and delivery techniques for 5G systems" (2017)
- Numerous Best Paper Award

FULL PROFILE
www.eurecom.fr/en/people/ksentini-adlen

DIGITAL SECURITY DEPARTMENT

PIETRO
MICHIARDI
PROFESSOR, HEAD OF DEPARTMENT

JOIGNED EURECOM IN 2005

"Distributed Systems and Cloud Computing" & "Algorithm Design"

ITALY

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BIOGRAPHY

Pietro Michiardi is a professor and Head of the Data Science department where he leads the Distributed System Group, which blends theory and system research focusing on large-scale distributed systems (including data processing and data storage), and scalable machine learning algorithms. He was the co-founder of CertiMate, a startup company in the secure communications business, and currently serves on the Scientific Advisory Board of GridPocket SA., a startup company in the smart-grid business field.

He holds dual M.S. degrees in Communications Systems from EURECOM and in Electrical Engineering from Politecnico di Torino, Italy, as well as a Ph.D. in Computer Science from Telecom Paris Tech. He has published over 150 papers to date.

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LATEST RESEARCH

- Scalable Machine Learning Algorithms
- Computational Statistics
- Parallel and Distributed Systems

VISIBILITY

- Author of numerous groundbreaking papers and two books
- Best Paper Award for the article "Access-time Cache Aware Algorithms" (ITC 2016)
- Etoiles de l'Europe for the Project FP7 BIGFOOT (2016)
- Co-patent holder (with Prof. emer. Refik Molva): Process for providing non repudiation of receipt (NRR) in an electronic transaction environment
- Best Student Paper Award for the article "A game theoretical approach to evaluate cooperation enforcement mechanisms in mobile ad hoc networks" (WIOPT 2003)

FULL PROFILE
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COMMUNICATION SYSTEMS DEPARTMENT

→

NAVID
NIKAEIN
PROFESSOR

JOIGNED EURECOM IN 2009

Mobile Advanced Networks Mobile Application and Services 5G

IRAN

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BIOGRAPHY

Navid Nikaein is a professor in the Communication Systems department where he is leading a R&D group on experimental system research related to 4G-5G wireless systems and networking protocols as well as agile service delivery platforms. He also coordinates the Open Source Mosaic-5G.io initiative.

He earned a Ph.D. degree in communication systems from the Swiss Federal Institute of Technology EPFL prior to joining EURECOM in 2003 as a research engineer. He started teaching in 2009. He has published more than 200 papers and holds several patents in the area of mobile networks and services.

LATEST RESEARCH

H-index **36**

- Data-driven control and orchestration in 5G
- Cloud-native and programmable RAN and CN(SDN, NFV)
- Edge packet services and RAN/CN data mining &analytics
- Design & development of flexible HW/SW platforms or 4G/5G

VISIBILITY

- Board member of OpenAirInterface Software Alliance, leading the development of the 4G->5G radio access networks of the OpenAirInterface wireless technology platform.
- Committee member of Telecom ParisTech-Eurecom Incubator
- Founding member of French startup 3ROAM
- Founder of Mosaic-5G inititive
- Best-in-Session Presentation Award for the article "Optimal downlink and uplink user association in Backhaul-limited HetNets" (INFOCOM 2016)
- CELTIC Excellence Award 2012 in Bronze for the project HNPS Heterogeneous Networks for European Public Safety project (2012)
- Best Paper Award for the article "Multicast and virtual road side units for multi technology alert messages dissemination" (WMAPS 2011)
- Guest Editor for Transactions on Emerging Telecommunications Technologies (ETT) - 2012, on the topic of "Machine-to-Machine: An Emerging Communication Paradigm".

FULL PROFILE
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DIGITAL SECURITY DEPARTMENT

MELEK ÖNEN
ASSISTANT PROFESSOR

JOIGNED EURECOM IN 2005

Security and Privacy for Big Data and the Cloud IoT

TURKEY • FRANCE

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BIOGRAPHY

Melek Önen is an assistant professor in the Digital Security department with a special interest in applied cryptography, cloud security, security and privacy for Big Data and machine learning, and IoT security.

She holds a B.Sc in Computer Science from Galatasaray University in Istanbul, Turkey; a M.Sc in Distributed Systems from Université Pierre et Marie Curie, Paris, and a Ph.D. ("Multicast communications in satellite networks: A user-centric approach") from EURECOM. She became a senior researcher at EURECOM in 2005 and habilitated in 2017. She has published over 85 papers to date.

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LATEST RESEARCH

- Applied cryptography
- Cloud security
- Security and Privacy for Big Data and Machine Learning
- IoT security

VISIBILITY

VISIBILITY, AWARD, DISTINCTION

DATA SCIENCE DEPARTMENT

PAOLO
PAPOTTI
PROFESSOR

JOIGNED EURECOM IN 2017

ITALY

User-centric data cleaning
Automatic fact-checking

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Phone : +33 (0)4 93 00 82 69

BIOGRAPHY

Paolo Papotti is an assistant professor in the Data Science department with a special interest in information quality, including data integration, data cleaning and computational fact checking. Previously he was also involved in the design and implementation of novel systems for search over the web and for data and metadata translation over heterogeneous data models.

He got his Ph.D. degree from the University of Roma Tre (Italy). He then was a postdoctoral researcher at the University of California, Santa Barbara. Before joining EURECOM, he worked as a scientist in the data analytics group at QCRI (Qatar) and an assistant professor at Arizona State University (USA). He has published over 100 papers to date.

LATEST RESEARCH

- Database
- Data exchange
- Schema mappings
- Data cleaning
- Data management

H-index **30**

VISIBILITY

- Regular program committee member for high-profile data management venues
- Associate editor for the ACM Journal of Data and Information Quality (JDIQ)
- Distinguished Reviewer Award (VLDB 2018)
- Best Demo Award for the demo " DataXFormer: An Interactive Data Transformation Tool" (SIGMOD 2015)
- Google Faculty Research Award (Fall 2015)

FULL PROFILE
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COMMUNICATION SYSTEMS DEPARTMENT

DIRK
SLOCK
PROFESSOR

JOIGNED EURECOM IN 1991

Signal Processing Communications

BELGIUM

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BIOGRAPHY

Dirk Slock is a professor in the Communications Systems department with a special interest in transmitter and receiver design for 4G/5G systems, and audio signal processing. He has taught speech coding for mobile communications, signal modeling and coding, radio engineering, advanced topics, and currently teaches statistical signal processing and signal processing techniques for wireless and wireline communications.

He holds an engineering degree at the University of Gent, Belgium (1982).He then received a Fulbright scholarship at Stanford University (1984), and earned M.S degrees in Electrical Engineering and Statistics, as well as a Ph.D. in Electrical Engineering from Stanford University. Prior to joining EURECOM in 1991, he was a member of the research staff at the Philips Research Laboratory Belgium. In 2000, he cofounded SigTone, a start-up developing music signal processing products. He has published over 560 papers to date.

LATEST RESEARCH

- Transmitter and receiver design for 4G/5G systems, with multiple antennas/users/cells, partial Channel State Information at the Transmitter (CSIT), interference management, Massive MIMO, cognitive radio, full duplex radio, localization
- Large random matrices, multi-antenna stochastic geometry
- Audio signal processing: acoustic echo cancelation, dereverberation, source separation
- Joint Wiener filtering and parameter estimation, empirical and variational Bayesian techniques, message passing, compressive sensing, sparse Bayesian learning

VISIBILITY

- Medal CNFRS URSI-France 2018
- Fellow Distinction from EURASIP (2015)
- Fellow Distinction from IEEE (2006)
- Inventor of semiblind channel estimation, the chip equalizer-correlator receiver (3G), MIMO-CDD, which is now part of Long-Term Evolution, and the single antenna interference cancellation (GSM standard)
- Hewlett-Packard Excellence Prize for the article "Blind anD semi-blind single user receiver techniques for asynchronous CDMA in multipath channels" (GLOBECOM 1998)
- Consultant on xDSL, DVB-T and 3G wireless systems in Silicon Valley and Sophia Antipolis.
- Is or was involved in 10 ANR projects and 9 European projects. In France, he has (had) direct research contracts with Philips, Orange Labs, Intel, ST-Ericsson.

FULL PROFILE
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COMMUNICATION SYSTEMS DEPARTMENT

THRASYVOULOS **SPYROPOULOS**

PROFESSOR

JOIGNED EURECOM IN 2010

GREECE

"Networking Modeling"

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BIOGRAPHY

Thrasyvoulos Spyropoulos is an assistant professor in the Communications Systems department with a special interest in distributed storage/caching, recommendation systems, 5G/5G+ networks, network slicing, social / complex network analysis, network optimization, applied machine learning, and stochastic modeling and performance analysis. He is very actively involved in a number of collaborative research projects with industry in the area of mobile networks.

He earned a Diploma in Electrical and Computer Engineering from the National Technical University of Athens, Greece (2000), followed by a PhD in Electrical Engineering from the University of Southern California, Los Angeles (2006). He worked as a postdoctoral researcher at INRIA and a Senior Lecturer/Researcher at ETH, Zurich, before joining EURECOM in 2010. He has published over 145 papers to date.

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LATEST RESEARCH

- Distributed Storage/Caching
- Recommendation Systems
- 5G/5G+ Networks
- Network Slicing
- Social / Complex Network Analysis
- Network Optimization
- Applied Machine Learning
- Stochastic Modeling and Performance Analysis

VISIBILITY

- Best-in-Session Presentation Award for the article "Joint Optimization of User Association and Dynamic TDD for Ultra-Dense Networks" (INFOCOM 2018)
- Best paper runner-up for the article "Offload (Only) the right jobs: Robust offloading using the Markov decision processes" (WOWMOM 2015)
- Best Paper Award for the article "An analysis of the information spreading delay in heterogeneous mobility DTNs" (WOWMOM 2012)
- Best Paper Award for the IEEE conference on Sensor and Ad Hoc Communications and Networks 2008

FULL PROFILE
www.eurecom.fr/~spyropou

DIGITAL SECURITY DEPARTMENT

MASSIMILIANO **TODISCO**

ASSISTANT PROFESSOR

JOIGNED EURECOM IN 2015

"Machine learning and pattern recognition"

ITALY

Email: Massimiliano.Todisco@eurecom.fr
Phone: +33 (0)4 93 00 81 95

BIOGRAPHY

Massimiliano Todisco is an assistant professor in the Digital Security Department with special interest in privacy preservation for biometrics and fake signal detection.

After obtaining a Master's degree in Physics and later in Sound Engineering (summa cum laude), Massimiliano earned his Ph.D. in Sensorial and Learning Systems Engineering from Tor Vergata University of Rome.

In his former career, Massimiliano carried out his research for many years in the Department of Electronic Engineering at Tor Vergata University, where he also served the Master in Sonic Arts as technical coordinator. In the same period, he even joined the research centre Fondazione Ugo Bordoni of Rome, where he spent three years as a researcher. Massimiliano has joined EURECOM in 2015, where he held a postdoctoral research position for four years prior to becoming a professor.

He has published over 120 papers to date.

LATEST RESEARCH

- Privacy enhancing technologies
- Encrypted signal processing
- Crypto-biometrics
- Brain-inspired machine learning
- Fake signal detection

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VISIBILITY

- Inventor of the Constant Q Cepstral Coefficients (CQCCs), the most used feature and source of inspiration for many researchers in the field of audio processing
- Best Paper Award for the paper "A New Feature for Automatic Speaker Verification Anti-Spoofing: Constant Q Cepstral Coefficients", ODYSSEY 2016
- Author of the highest-cited technical article in the area of fake audio detection
- Co-organiser of the ASVspoof challenges https://www.asvspoof.org/
- Co-organiser of the VoicePrivacy challenges https://www.voiceprivacychallenge.org/

FULL PROFILE
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DATA SCIENCE DEPARTMENT

RAPHAËL
TRONCY
ASSISTANT PROFESSOR

JOIGNED EURECOM IN 2009

FRANCE

Semantic Web Technologies
Human-Computer Interaction for the Web Smart City
Multimedia Technologies

BIOGRAPHY

Raphaël Troncy is an assistant professor and Head of the Multimedia Semantics group in the Data Science department with a special interest in semantic data integration, knowledge graphs, semantic web, natural language understanding, information extraction, and recommender systems. He is a sought-after Chair of prestigious international conferences, a program committee member/organizer of hundreds of international workshops, panels, and events.

After acquiring B.Sc, M.Sc and Ph.D. degrees in Computer Science at Université Joseph Fourier (Grenoble, France), as well as a Masters from Université de Montréal, he was an ERCIM Fellow at the National Research Council (CNR), Pisa, and a researcher at the National Research Institute for Mathematics and Computer Science in Amsterdam, before joining EURECOM in 2009. He has published over 300 papers to date.

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Phone : +33 (0)4 93 00 82 42

LATEST RESEARCH

- Semantic Data Integration
- Knowledge Graphs
- Semantic Web
- Natural Language Understanding
- Information Extraction
- Recommender Systems

H-index **36**

VISIBILITY

- W3C Advisory Committee Representative for Institut Telecom/EURECOM
- Co-chair of the W3C Media Fragments Working Group
- Co-chair of the W3C Incubator Group on Multimedia Semantics
- Editorial Board member of IEEE Special Technical Community on Social Networks
- Journal Reviewer (IEEE, Elsevier, IOS, Springer, ACM)
- Best Poster Award for the article "Knowledge graph embeddings with node2vec for item recommendation" (ESWC 2018)
- Best Demo Award for the article "NexGen-TV: Providing real-time insight during political debates in a second screen application" (ACMMM 2017)
- Open Knowledge Extraction Challenge Award for the article "ADEL@OKE 2017: A generic method for indexing knowlege bases for entity linking" (ESWC 2017)
- Sentiment Analysis Challenge — Polarity Detection Award for the article "Sentiment polarity detection from Amazon reviews: An experimental study" (ESWC 2016)
- Winner of the Semantic Web Challenge for the paper "3cixty@ Expo Milano 2015 enabling visitors to explore a smart city" (ISWC 2015)

FULL PROFILE
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DATA SCIENCE DEPARTMENT

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MARIA ZULUAGA
ASSISTANT PROFESSOR

JOIGNED EURECOM IN 2019

Machine Learning
e-Health

ITALY

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BIOGRAPHY

Maria Zuluaga is an assistant professor in the Data Science department with a special interest in the development of reliable machine learning techniques that can be safely used in high risk domains such as healthcare. In her work and talks she looks at practical applications such as development of reliable learning frameworks addressing the problems of data complexity and low error tolerance, and recent progress in prenatal diagnosis of congenital heart disease thanks to the use of machine learning techniques.

She holds a B.Sc in Electronics Engineering from Universidad del Valle, Colombia; a M.Sc in Computer Science from

Universidad de los Andes, Colombia, and a PhD in Signal and Image Processing from Université Claude Bernard Lyon 1 & Uniandes. Prior to joining EURECOM, she led the research team within the AI research department at Amadeus, France, was a Senior Research Associate at University College London, UK, and a post-doctoral fellow at the European Synchrotron Radiation Facility, France.

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LATEST RESEARCH

November 2019: Autism spectrum disorder characterization in children by capturing local-regional brain changes in MRI (publication in Medical Physics)

October 2019 : Interactions homme-algorithmes pour un meilleur apprentissage automatique en santé

September 2019: Micro-CT and histological investigation of the spatial pattern of feto-placental vascular density (publication in Placenta magazine)

VISIBILITY

• November 2019: Autism spectrum disorder characterization in children by capturing local-regional brain changes in MRI (publication in Medical Physics)

• October 2019 : Interactions homme-algorithmes pour un meilleur apprentissage automatique en santé (Poster)

• September 2019: Micro-CT and histological investigation of the spatial pattern of feto-placental vascular density (publication in Placenta magazine)

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