

# FRANCESCO GRINGOLI

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## EDUCATION

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**University of Brescia** Italy  
Ph.D. in Information Engineering February, 2002  
Advisor: Prof. Costantino De Angelis  
Dissertation: “All-Optical Wavelength Conversion Devices for Optical Communication Systems”

**University of Padova** Italy  
M.Sc. in Telecommunication Engineering, Summa cum Laude October, 1998  
Advisor: Prof. Costantino De Angelis  
Dissertation: “All-Optical Signal Processing by means of Quadratic Non-Linearity”

## EXPERIENCE

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**Dept. of Information Engineering, University of Brescia** Brescia, Italy  
*Full Professor* May 2021 - present

**Dept. of Information Engineering, University of Brescia** Brescia, Italy  
*Associate Professor* May 2018 - April 2021

**Dept. of Information Engineering, University of Brescia** Brescia, Italy  
*Assistant Professor* March 2005 - April 2018

**NEC Laboratories Europe** Heidelberg, Germany  
*Visiting Researcher* May 2012 - July 2012

**FTW (Forschungszentrum Telekommunikation Wien)** Vienna, Austria  
*Visiting Researcher* April 2007 - June 2007

**Dept. of Automation Engineering, University of Brescia** Brescia, Italy  
*System and Network Administrator* November 2001 - February 2005

**IRCOM, University of Limoges** Limoges, France  
*Visiting Researcher* January 1999 - June 1999

## DISTINCTIONS

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- Best paper award in WiNTECH 2021 – F. Gringoli, M. Cominelli, A. Blanco, J. Widmer, “AX-CSI: Enabling CSI Extraction on Commercial 802.11ax Wi-Fi Platforms”. Proceedings of the 15th ACM Workshop on Wireless Network Testbeds, Experimental evaluation and CHaracterization (WiNTECH’21), New Orleans, US, Apr. 1, 2022.

- Best paper award in Medcomnet 2021 – M. Cominelli, F. Gringoli, R. Lo Cigno, “Passive Device-Free Multi-Point CSI Localization and its Obfuscation with Randomized Filtering”, 19th Mediterranean Communication and Computer Networking Conference, Ibiza, Spain (online), June 15-17 2021.
- Best paper award in ACM WiSec 2017 – M. Schulz, F. Gringoli, D. Steinmetzer, M. Koch, M. Hollick, “Massive Reactive Smartphone-Based Jamming using Arbitrary Waveforms and Adaptive Power Control”, ACM Conference on Security and Privacy in Wireless and Mobile Networks (WiSec 2017), Boston, MA, USA, July 18–20, 2017.
- Best Student Paper Award in WiSEC 2014 - D.S. Berger, F. Gringoli, N. Facchi, I. Martinovic, J. Schmitt, “Gaining Insight on Friendly Jamming in a Real-World IEEE 802.11 Network”, ACM WiSec 2014, Oxford, UK, July 23-25, 2014.
- Premio Francesco Carassa “per il miglior lavoro nel settore RETI DI TELECOMUNICAZIONI” – N. Facchi, P. Gallo, F. Gringoli, S. Paris, I. Tinnirello, A. Capone “Flexible and Modular Support for Multicast Rate Adaptation in WLANs”, Riunione annuale GTTI 2013, Ancona.
- Best Paper Award in FUNEMS 2013 - G. Bianchi, P. Gallo, D. Garlisi, F. Giuliano, F. Gringoli, I. Tinnirello, “A Control Architecture for Wireless MAC Processor Networking”, Future Network and Mobile Summit 2013, Lisbon, Portugal, July 3-5, 2013.
- Best Paper Award in WiNTECH 2011 - D. Garlisi, F. Gringoli, P. Gallo, F. Giuliano, S. Mangione, I. Tinnirello, “MAC-Engine: a new architecture for executing MAC algorithms on commodity WiFi hardware”, WiNTECH 2011 Workshop, Las Vegas (NV), USA, Sept. 19, 2011

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## BRIEF

Francesco Gringoli is Full Professor at the Dept. of Information Engineering of the University of Brescia where he coordinates the activity of several PhD and Master thesis students. His current research interests include security assessment, performance evaluation and medium access control in Wireless LANs; high-speed packet processing techniques for the analysis and management of network traffic; and statistical analysis of users’ behaviours on social network platforms. During the years he created a wide network of contacts that include many Universities and Companies around the world.

He is an author or co-author of more than 100 papers published in international journals or in proceedings of international conferences: his bibliography indexes reported by Google Scholar count 3600 citations and 29 as h-index.

He is regular member of the Technical Program Committee in major IEEE conferences and reviewer for major IEEE and ACM technical journals. He is editor for Hindawi Mobile Information Systems and Hindawi/Wiley Security and Communication Networks journals.

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## RESEARCH INTERESTS

### Wireless LANs

2009 - present

- He is analysing security and privacy issues in wireless networks including Wi-Fi and Bluetooth. He recently discovered a new class of vulnerabilities with protocol coexistence in commercial devices [21,26]; he demonstrated how to violate privacy of classic bluetooth connection and tracking users [24]; and introduced the first opensource sniffer for Bluetooth LE [23]; he demonstrated the vulnerability of the positioning features introduced by Bluetooth LE [36].
- He is the leader of the OpenFWWF project that targets the release of open-source firmwares for 802.11 network interface cards. Recent algorithms built on this firmware include: i) system for converting a smartphone into a powerful Software-Defined-Radio platform [38]; ii) system for the transparent centimetre-accurate localisation of users’ terminals [35]; iii) first implementation of the IEEE 802.11aa protocol for reliable multicast transmissions [32]. For his expertise he has been involved in the H2020

Project WiSHFUL, and in the FP7 Project FLAVIA; inside the latter he contributed to the Wireless MAC processor, an architecture that defines a new programming paradigm for wireless communication and enables hardware-agnostic dynamic reconfiguration of the medium access control protocol (patent [124]).

- In the field of Software-Defined-Radio, he is developing a framework for the autonomous recognition and local break out of network traffic at the 5G network edge [34]; he is evaluating the performance achievable with opensource platforms like OpenairInterface and srslte for the emulation of beyond-4G networks [33]; he is currently analysing the complexity of LDPC encoding process in opensource tools that deploys gNB node.
- He works as consultant for several companies: more recently i) he is part of the ZTE technical security committee in Italy; ii) he helped the design, implementation and testing of multi-standard wireless access techniques based on Smart Antennas manufactured by Italian SME Adant Technologies; and iii) he assessed the performance gain achievable with the usage of reconfigurable antennas for ZyXEL Corporation.

### High speed packet processing

2006 - present

- He has been studying and developing robust and efficient tools for the classification and management of network traffic, including application detection and analysis of ciphered data sessions. He is currently collaborating to the implementation of high-performance transport layer engines for the complete offloading of layer four protocols based on their Finite State Descriptions. And he is developing mechanisms for the distributed measurement of TCP delivery performance at the network edge to improve users' experience [22].
- He collaborated to the definition of supervised approaches for detecting i) applications behind TCP sessions [107], and discovering traffic classes over encrypted streams [99]. The latter activity led to a US Patent [123]. He has been the main developer of tools like MTCLASS [61] and GT [92] for real time traffic classification over 10Gb/s links. He has been involved in Italian Prin Projects RECIPE and IMPRESA as coordinator for University of Brescia: both projects targeted the development of network probes for traffic collection and classification. He also collaborated with NEC Laboratories Europe for the definition of multi-core architectures for high speed data processing [67]. This activity led to a US Patent [125].

## FUNDING

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<b>CSI-MURDER</b>	2020
Funded by EU, opencall of ORCA Project	<b>EUR 48k</b>
<b>WIRELESSBATTLE</b>	2019
Funded by SME Adant Technologies	<b>EUR 15k</b>
<b>DINEMANETWORK</b>	2018
Funded by Dinema S.p.A.	<b>EUR 4k</b>
<b>VIMARHOME</b>	2018
Funded by VIMAR S.p.A.	<b>EUR 4k</b>
<b>FFABR (Fondo per il finanziamento delle attività base di ricerca)</b>	2018
Funded by Italian Ministry of University	<b>EUR 3k</b>

<b>SALTE (Smart Antenna for LTE technology)</b> Funded by SME Adant Technologies	2017 <b>EUR 8k</b>
<b>SAC (Smart Antenna Competition)</b> Funded by Zyxel Communications Corp.	2016 <b>EUR 12k</b>
<b>SAS (Smart Antenna System)</b> Funded by SME Adant Technologies	2013 – 2014 <b>EUR 24k</b>
<b>IMPRESA (Internet Monitoring with PRivacy-PReserving Encoding and Selective Access)</b> Italian PRIN National Project	2010 – 2011 <b>EUR 45k</b>
<b>RECIPE (Robust and Efficient Classification of IP nEtwork traffic)</b> Italian PRIN National Project	2007-2009 <b>EUR 76k</b>
<b>Other local funds including teaching and lab equipments</b> University of Brescia	2005-present <b>EUR 20k</b>

## **RECENT RESEARCH PROJECTS AND COLLABORATIONS**

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<b>WiSHFUL (Wireless Software and Hardware platforms for Flexible and Unified radio and network controL)</b> H2020 project 645274	2014-2018
<b>SmartSCUOLA</b> National Italia project, led by University of Brescia	2014-2016
<b>CABIN-CREW (enabling Cognitive Access BenchmarkINg over CREW)</b> Opencall CREW - EU FP7-258301	2013-2014
<b>iGun</b> National Italian project, led by Beretta Armi S.p.A.	2011-2014
<b>DEMONS (DEcentralized, cooperative, and privacy-preserving MONitoring for trustworthinesS)</b> FP7 project 257315	2012–2013
<b>FLAVIA (FLexible Architecture for Virtualizable wireless future Internet Access)</b> FP7 project 257263	2011-2013
<b>PERIMETER (User-centric paradigm for seamless mobility in the future)</b> FP7 project 224024	2008–2011



## STUDENTS SUPERVISION ACTIVITIES

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<b>Ph.D. students supervision</b> <i>Dept. of Information Engineering</i>	2012 - present <i>University of Brescia</i>
· Marco Cominelli	2019 - present
· Alessandro Galeazzi	2018 - present
· Nahla Ali	2014 - 2018
· Nicolò Facchi	2013 - 2016
<b>Master students supervision</b> <i>Dept. of Information Engineering</i>	2005 - present <i>University of Brescia</i>
· He supervised more than 30 students	

## TEACHING ACTIVITIES

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<b>Master Degree in “Communication Technologies and Multimedia”</b> <i>Dept. of Information Engineering</i>	Fall 2012 - present <i>University of Brescia</i>
· Network Security, 6 credits	Fall 2012 - present
· Traffic Modelling and Streaming, 3 credits	Fall 2012 - present
<b>Master Degree in “Automation Engineering”</b> <i>Dept. of Mechanical Engineering</i>	Fall 2019 - present <i>University of Brescia</i>
· Bigdata and Cybersecurity, 3 credits	Fall 2019 - present
<b>Bachelor Degree in “Telecommunication and Electronic Engineering”</b> <i>Dept. of Information Engineering</i>	Fall 2005 - present <i>University of Brescia</i>
· Advanced Telecommunication Network, 3 credits	Fall 2015 - present
· Telecommunication Network, 9 credits	Fall 2013
· Telecommunication Network B, 5 credits	Fall 2009
· Lab Instructor for Telecommunication Network B	Fall 2006 - 2008
· Lab Instructor for Electrical Communications A	Fall 2005 - 2006
· Lab Instructor for Electrical Communications B	Fall 2005 - 2006
<b>Master Degree in “Telecommunication Engineering”</b> <i>Dept. of Information Engineering</i>	Fall 2005 - Spring 2012 <i>University of Brescia</i>
· Network Security, 5 credits	Fall 2011
· Lab Instructor for Network Security	Fall 2006 - 2010
· Traffic Modelling, 5 credits	Fall 2006 - 2011
· Lab Instructor for Traffic Modelling	Fall 2005

## TECHNICAL STRENGTHS

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<b>System Modelling</b>	Markov Chain theory for modelling access protocols and queue behaviour; statistical modelling with multi-variate distributions; clustering techniques.
<b>Performance analysis</b>	Complex testbeds with lot of nodes; remote experiment automation and management; performance metric collection.
<b>Languages</b>	C, C++, Java, Python, Perl, Matlab. Ability to design, implement and debug complex applications, with multi-thread, asynchronous IO, network programming including raw socket, memory management.
<b>System programming</b>	Deep knowledge of the Linux Network Kernel Stack and the driver interface with Network Cards; parallel programming in multi-core platform; Non-Uniform Memory Access.
<b>System Management</b>	Twenty years experience with Linux. Deep knowledge of FreeBSD, OS X and cut-down distributions for embedded computing (OpenWRT and DD-WRT).

## LANGUAGE SKILLS

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- **English** - Written and oral fluency
- **Italian** - Native speaker
- **French** - Reading basic

## PEER REVIEWED PUBLICATIONS

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1. M. Cominelli, F. Gringoli, R. Lo Cigno, "On the properties of device-free multi-point CSI localization and its obfuscation", Elsevier Computer Communications, 189, pp. 67-78, 2022.
2. J. Classen, F. Gringoli, M. Hermann, M. Hollick, "Attacks on Wireless Coexistence: Exploiting Cross-Technology Performance Features for Inter-Chip Privilege Escalation". Proceedings of the 43rd IEEE Symposium on Security and Privacy (S&P), San Francisco, US, June 22-26, 2022.
3. A.M. Romanov, F. Gringoli, "Enhanced Self-Synchronized Reduced Media-Independent Interface for Robotic and Automotive Applications". IEEE Transactions on Industrial Informatics, 18(4), pp. 2274-2286, 2022.
4. M. Cominelli, F. Gringoli, R. Lo Cigno, "AntiSense: Standard-compliant CSI obfuscation against unauthorized Wi-Fi sensing". Elsevier Computer Communications, 185, pp. 92-103, 2022.
5. F. Gringoli, M. Cominelli, A. Blanco, J. Widmer, "AX-CSI: Enabling CSI Extraction on Commercial 802.11ax Wi-Fi Platforms". Proceedings of the 15th ACM Workshop on Wireless Network Testbeds, Experimental evaluation and CHaracterization (WiNTECH'21), New Orleans, US, Apr. 1, 2022.
6. I. Palama, A. Amici, F. Gringoli, G. Bianchi, "'Careful with that Roam, Edu': experimental analysis of Eduroam credential stealing attacks", Proceedings of the 17th Conference on Wireless On-Demand Network Systems and Services, WONS 2022.
7. F. Gringoli, D. J. Leith, "Modelling Downlink Aggregation in Paced WLANs". Proceedings of the ACM International Symposium on Mobility Management and Wireless Access (MobiWac'21), Virtual, Online, Nov. 22-26, 2021.
8. F. Gringoli, D. Leith, "Low-delay high-rate operation of 802.11ac WLAN downlink: Nonlinear controller analysis & design". Elsevier Computer Networks 197, pp. 1-11, 2021.
9. I. Palamà, F. Gringoli, G. Bianchi, N. Blefari-Melazzi, "IMSI Catchers in the wild: A real world 4G/5G assessment". Elsevier Computer Networks 194, pp. 1-12, 2021.
10. A.B. Pizarro, J.P. Beltrán, M. Cominelli, F. Gringoli, J. Widmer, "Accurate ubiquitous localization with off-the-shelf IEEE 802.11ac devices". Proceedings of the 19th Annual International Conference on Mobile Systems, Applications, and Services (MobySys'21), Virtual, Online, June 24-July 2, 2021.
11. F. Gringoli, D. Leith, "Low-Delay Proportional Fair Rate Allocation for 802.11ac WLAN Downlink". Proceedings of the IEEE International Conference on Communications Workshops (ICC'21), Virtual, Online, June 14-23, 2021.
12. P. Baroni, F. Cerutti, D. Fogli, M. Giacomini, F. Gringoli, G. Guida, P. Sullivan, "Self-Aware Effective Identification and Response to Viral Cyber Threats". Proceedings of the 13th International Conference on Cyber Conflict (CyCon 2021), Virtual, Online, May 25-28, 2021.
13. M. Cominelli, F. Kosterhon, F. Gringoli, R. Lo Cigno, A. Asadi, "IEEE 802.11 CSI randomization to preserve location privacy: An empirical evaluation in different scenarios". Elsevier Computer Networks 191, pp. 1-12, 2021.
14. A. Romanov, F. Gringoli, A. Sikora, "A Precise Synchronization Method for Future Wireless TSN Networks". IEEE Transactions on Industrial Informatics 17(5), pp. 3682-3692, 2021.
15. H. Hassani, F. Gringoli, D. J. Leith, "Quick & plenty: Achieving low delay & high rate in 802.11ac edge networks". Elsevier Computer Networks, 187, pp. 1-17, 2021.



16. M. Cominelli, F. Gringoli, R. Lo Cigno, "Non Intrusive Wi-Fi CSI Obfuscation Against Active Localization Attacks". Proceedings of the 16th Conference on Wireless On-Demand Network Systems and Services (WONS 2021), Virtual, Online, March 9-11, 2021.
17. M. Cominelli, F. Gringoli, R. Lo Cigno, "Passive device-free multi-point CSI localization and its obfuscation with randomized filtering". Proceedings of the 19th Mediterranean Communication and Computer Networking Conference (MedComNet 2021). Virtual, Online, June 15-17, 2021.
18. A. Galeazzi, L. Badia, S. C. Chang, F. Gringoli, "Reputation-based spectrum data fusion against falsification attacks in cognitive networks". Proceedings of the 19th Mediterranean Communication and Computer Networking Conference (MedComNet 2021). Virtual, Online, June 15-17, 2021.
19. I. Palamà, F. Gringoli, G. Bianchi, N. Blefari Melazzi, "The diverse and variegated reactions of different cellular devices to IMSI catching attacks". Proceedings of the 14th International Workshop on Wireless Network Testbeds, Experimental evaluation and Characterization (WiNTECH'20), co-located with MobiCom 2020, Virtual, Online, Sept. 25, 2020.
20. M. Cominelli, F. Kosterhon, F. Gringoli, R. Lo Cigno, A. Asadi, "An Experimental Study of CSI Management to Preserve Location Privacy". Proceedings of the 14th International Workshop on Wireless Network Testbeds, Experimental evaluation and Characterization (WiNTECH'20), co-located with MobiCom 2020, Virtual, Online, Sept. 25, 2020.
21. J. Classen, F. Gringoli, "Spectra: Breaking Separation Between Wireless Chips". Black Hat 2020.
22. H. Hassani, F. Gringoli, D. Leith, "Regulating Aggregation Level For Low Latency in 802.11ac". Proceedings of 18th Mediterranean Communication and Computer Networking Conference (Medcomnet 2020), Virtual, Online, June 17-19, 2020.
23. M. Cominelli, P. Patras, F. Gringoli, "One GPU to Snoop Them All: a Full-Band Bluetooth Low Energy Sniffer". Proceedings of 18th Mediterranean Communication and Computer Networking Conference (Medcomnet 2020), Virtual, Online, June 17-19, 2020.
24. M. Cominelli, F. Gringoli, P. Patras, G. Noubir, "Even Black Cats Cannot Stay Hidden in the Dark: Full-band De-anonymization of Bluetooth Classic Devices". Proceedings of 41st IEEE Symposium on Security and Privacy, Virtual, Online, May 18-20, 2020.
25. G. Garcia-Aviles, M. Gramaglia, P. Serrano, F. Gringoli, S. Fuente-Pascual, I. Labrador Pavon, "Experimenting with open source tools to deploy a multi-service and multi-slice mobile network". Elsevier Computer Communications, 150, pp. 1-12, 2020.
26. J. Ruge, J. Classen, F. Gringoli, M. Hollick, "Frankenstein: Advanced Wireless Fuzzing to Exploit New Bluetooth Escalation Targets". Proceedings of the 29th USENIX Security Symposium, Virtual, Online, Aug. 12-14, 2020.
27. G. Bianchi, M. Welzl, A. Tulumello, F. Gringoli, G. Belocchi, M. Faltelli, S. Pontarelli, "XTRA: Towards Portable Transport Layer Functions". IEEE Transactions on Network and Service Management, 16(4), pp. 1507-1521, 2019.
28. A. M. Romanov, F. Gringoli, A. Sikora, "High Precision Synchronization between Commercial WiFi-ICs and External Device". Proceedings of the 16th IEEE Workshop on Positioning, Navigation and Communications (WPNC), Bremen, Germany, Oct. 23-24, 2019.
29. F. Gringoli, M. Schulz, J. Link, M. Hollick, "Free Your CSI: A Channel State Information Extraction Platform For Modern Wi-Fi Chipsets". Proceedings of the 13th International Workshop on Wireless Network Testbeds, Experimental evaluation and Characterization (WiNTECH'19), co-located with MobiCom 2019, Los Cabos, Mexico, Oct. 25, 2019.

30. M. Cominelli, P. Patras, F. Gringoli, "Dead on Arrival: An Empirical Study of The Bluetooth 5.1 Positioning System". Proceedings of the 13th International Workshop on Wireless Network Testbeds, Experimental evaluation and Characterization (WiNTECH'19), Los Cabos, Mexico, Oct. 25, 2019.
31. L. Badia, F. Gringoli, "A Game of One/Two Strategic Friendly Jammers versus a Malicious Strategic Node". IEEE Networking Letters, 1(1), pp. 6-9, 2019.
32. F. Gringoli, P. Serrano, I. Ucar, N. Facchi, A. Azcorra, "Experimental QoE evaluation of multicast video delivery over IEEE 802.11aa WLANs". IEEE Transactions on Mobile Computing, 18(11), pp. 2549-2561, 2019.
33. F. Gringoli, P. Patras, C. Donato, P. Serrano, Y. Grunenberger, "Performance Assessment of Open Software Platforms for 5G Prototyping". IEEE Wireless Communications, 25(5), pp. 10-15, 2018.
34. M. Gramaglia, I.L. Pavón, F. Gringoli, G. Garcia-Aviles, P. Serrano, "Design and Validation of a Multi-service 5G Network with QoE-aware Orchestration", Proceedings of the 2018 International Workshop on Wireless Network Testbeds, Experimental Evaluation & Characterization, (WiNTECH'18), co-located with MobiCom 2018, New Delhi, India, Nov. 2, 2018.
35. F. Ricciato, S. Sciancalepore, F. Gringoli, N. Facchi, G. Boggia, "Position and Velocity Estimation of a Non-Cooperative Source from Asynchronous Packet Arrival Time Measurements". IEEE Transactions on Mobile Computing, 17(9), pp. 2166-2179, 2018.
36. F. Gringoli, N. Ali, F. Guerrini, P. Patras, "A Flexible Framework for Debugging IoT Wireless Applications". Proceedings of the 2018 Workshop on Metrology for Industry 4.0 and IoT, Brescia, Italy, Apr. 16-18, 2018.
37. F. Gringoli, R. Klose, M. Hollick, N. Ali, "Making Wi-Fi Fit for the tactile internet: Low-Latency Wi-Fi flooding using concurrent transmissions", Proceedings of the 54th IEEE International Conference on Communications, (ICC 2018), Kansas City, US, May 20-24, 2018.
38. M. Schulz, F. Gringoli, J. Link, M. Hollick, "Shadow Wi-Fi: Teaching smartphones to transmit raw signals and to extract channel state information to implement practical covert channels over Wi-Fi". Proceedings of the 16th ACM International Conference on Mobile Systems, Applications, and Services, (MobiSys 2018), Munich, Germany, June 10-15, 2018.
39. N. Facchi, F. Gringoli, P. Patras, "Maximising the utility of enterprise millimetre-wave networks". Elsevier Computer Communications, 119, pp. 29-42, 2018
40. M. Schulz, F. Knapp, E. Deligeorgopoulos, D. Wegemer, F. Gringoli, M. Hollick, "DEMO: Nexmon in action: Advanced applications powered by the nexmon firmware patching framework". Proceedings of the 11th Workshop in Wireless Network Testbeds, Experimental Evaluation and Characterization, (WiNTECH 2017), co-located with MobiCom 2017, Snowbird, US, Oct. 20, 2017.
41. A. Azcorra, I. Ucar, F. Gringoli, A. Banchs, P. Serrano, "uNap: Practical micro-sleeps for 802.11 WLANs". Elsevier Computer Communications, 110, pp. 175-186, 2017.
42. M. Schulz, E. Deligeorgopoulos, M. Hollick, F. Gringoli, "DEMO: Demonstrating reactive smartphone-based jamming". Proceedings of the 10th ACM Conference on Security and Privacy in Wireless and Mobile Networks, (WiSec 2017), Boston, US, July 18-20, 2017.
43. M. Schulz, F. Gringoli, D. Steinmetzer, M. Koch, M. Hollick, "Massive Reactive Smartphone-Based Jamming using Arbitrary Waveforms and Adaptive Power Control". Proceedings of the 10th ACM Conference on Security and Privacy in Wireless and Mobile Networks, (WiSEC 2017), Boston, US, July 18-20, 2017.

44. F. Maturi, F. Gringoli, R. Lo Cigno, "A dynamic and autonomous channel selection strategy for interference avoidance in 802.11". Proceedings of the 13th Wireless On-demand Network systems and Services Conference, (WONS 2017), Jackson Hole, WY, US, Feb. 21-24, 2017.
45. L. Sanabria-Russo, J. Barcelo, B. Bellalta, F. Gringoli, "A High Efficiency MAC Protocol for WLANs: Providing Fairness in Dense Scenarios". IEEE Transactions on Networking, 25(1), pp. 492-505, 2017.
46. N. Facchi, F. Gringoli, D. Malone, P. Patras, "Imola: A decentralised learning-driver protocol for multi-hop White-Fi". Elsevier Computer Communications, 105, pp. 157-168, 2017.
47. D.S. Berger, F. Gringoli, N. Facchi, I. Martinovic, and J. Schmitt, "Friendly Jamming on Access Points: Analysis and Real-World Measurements". IEEE Transactions on Wireless Communications, 15(9), pp. 6189-6202, 2016.
48. S. Rinaldi, P. Ferrari, A. Flamini, M. Loda, N. Ali, F. Gringoli, "An application of IEEE 802.11ac to Smart Grid automation based on IEC 61850". Proceedings of the 42nd Annual Conference of the IEEE Industrial Electronics Society, (IECON 2016), Firenze, Italy, Oct. 24-27, 2016.
49. C. Capretti, F. Gringoli, N. Facchi, P. Patras, "LTE/Wi-Fi co-existence under scrutiny: An empirical study". Proceedings of the 10th Workshop in Wireless Network Testbeds, Experimental Evaluation and Characterization, (WiNTECH'16), co-located with MobiCom 2016, New York, US, Oct. 3-7, 2016.
50. N. Facchi, F. Gringoli, D. Malone, and P. Patras, "When Is the Right Time to Transmit in Multi-hop White-Fi?". Proceedings of the 17th International Symposium on a World of Wireless, Mobile and Multimedia Networks, (WoWMoM'16) Demo, Coimbra, Portugal, June 21-24, 2016.
51. E. Costa Alfaia, M. Dusi, L. Fiori, F. Gringoli, S. Niccolini, "Fault-Tolerant Streaming Computation with BlockMon". Proceedings of the IEEE Global Communications Conference, (Globecom 2015), San Diego, US, Dec. 6-10, 2015.
52. N. Facchi, F. Gringoli, F. Ricciato, A. Toma, "Emitter localisation from reception timestamps in asynchronous networks". Elsevier Computer Networks, 88, September 2015, pp.202-217.
53. S. Rinaldi, P. Ferrari, N. Ali, F. Gringoli, "IEC 61850 for Micro Grid Automation over Heterogeneous Network: Requirements and Real Case Deployment". Proceedings of 13th IEEE International Conference on Industrial Informatics, (INDIN 2015), Cambridge, UK, July 22-24, 2015.
54. P. Salvador, F. Gringoli, P. Serrano, N. Facchi, S. Paris, "Making a Case for Flexible 802.11 Architectures". Proceedings of 51st IEEE International Conference on Communications, (ICC 2015), London, UK, June 8-12, 2015.
55. L. Sanabria-Russo, F. Gringoli, J. Barcelo, B. Bellalta, "Implementation and Experimental Evaluation of a Collision-Free MAC Protocol for WLANs". Proceedings of 51st IEEE International Conference on Communications, (ICC 2015), London, UK, June 8-12, 2015.
56. F. Gringoli, S. Paris, N. Facchi, et al "Modeling and Simulation of Computer Networks and Systems". Elsevier, May 2015.
57. N. Facchi, F. Gringoli, D.S. Berger, "A Testbed to Evaluate Frequency-Hopping Anti-Jamming Techniques in IEEE 802.11". Proceedings of the 9th International Workshop on Wireless Network Testbeds, Experimental Evaluation & Characterization, (WiNTECH 2014), co-located with Mobicom 2014, Maui, Hawaii, USA, Sept. 7, 2014.
58. M. Dusi, R. Bifulco, F. Gringoli, F. Schneider, "Reactive Logic in Software-Defined Networking: Measuring Flow-Table Requirements". Proceedings of the 5th International Workshop on TRaffic Analysis and Characterization, (TRAC 2014), Nicosia, Cyprus, Aug. 4-8, 2014.

59. D.S. Berger, F. Gringoli, N. Facchi, I. Martinovic, J. Schmitt, "Gaining Insight on Friendly Jamming in a Real-World IEEE 802.11 Network". Proceedings of the 7th ACM Conference on Security and Privacy in Wireless and Mobile Networks, (WiSec 2014), Oxford, UK, July 23-25, 2014.
60. P. Salvador, V. Mancuso, P. Serrano, F. Gringoli, A. Banchs, "VoIPiggy: Analysis and Implementation of a Mechanism to Boost Capacity in IEEE 802.11 WLANs Carrying VoIP traffic". IEEE Transactions on Mobile Computing, 13(7), 1640-1652, 2014.
61. G. Nassopoulos, D. Rossi, F. Gringoli, L. Nava, M. Dusi, P.M. Santiago del R o, "Flow Management at Multi-Gbps: Tradeoffs and Lessons Learned". Proceedings of the 6th International Workshop on Traffic Monitoring and Analysis, (TMA 2014), London (UK), April 14, 2014.
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123. Patent granted  
Title: “Method for determining if an encrypted flow of packets belongs to a predefined class of flows”.  
Patent number: US7852775 B2.  
Date of Patent: December 14, 2010 (filed on February 11, 2009).  
Assignee: Università degli Studi di Brescia.  
Inventors: M. Crotti, M. Dusi, F. Gringoli, L. Salgarelli.
124. Patent granted  
Title: “Method of changing the operation of wireless network nodes”.  
Patent number: US9148800 B2.  
Date of Patent: September 29, 2015 (filed on May 31, 2013).  
Inventors: I. Tinnirello, G. Bianchi, P. Gallo, D. Garlisi, F. Giuliano, F. Gringoli.
125. Patent granted  
Title: “Method for operating a distributed computing system and a distributed computing system”.  
Patent number: US10069675 B2.  
Date of Patent: September 4, 2018 (filed on August 30, 2013).  
Assignee: NEC CORPORATION.  
Inventors: M. Dusi, F. Gringoli, P. Laffranchini.
126. Patent granted  
Title: “Método de Ahorro de Energía Basado en Micropagados para un Dispositivo Inalámbrico en una Red de Telecomunicación”.  
Patent number: ES 2598169B1.  
Date of Patent: August 29, 2017 (filed on July 22, 2016).  
Assignee: Universidad Carlos III de Madrid, Università degli Studi di Brescia.  
Inventors: A. Azcorra, I. Úcar, A. Banchs, P. Serrano (Universidad Carlos III de Madrid), F. Gringoli (Università degli Studi di Brescia).
127. Patent application  
Title: “System and method for multi-channel packet transmission”.  
Publication number: 20140050087 A1  
Publication date: February 20, 2014 (filed on December 13, 2011).  
Applicant: Alcatel-Lucent.  
Inventors: M. Pasotti, P. Di Prisco, G. Corbetta, G. Barzaghi, F. Vodola, G. De Blasio, M. Gerosa, L. Salgarelli, F. Gringoli.
128. Patent application  
Title: “Method and system for checkpointing a global state of a distributed system”.  
Publication number: 20160179627 A1.  
Publication date: June 23, 2016 (filed on July 30, 2013).  
Applicant: NEC CORPORATION.  
Inventors: M. Dusi, L. Fiori, F. Gringoli.