



IDENTIFICACIÓN DEL EQUIPO INVESTIGADOR

NOMBRE DEL EQUIPO O GRUPO DE INVESTIGACIÓN	Security of Network and Distributed Applications (SeNDA)
UNIDAD/DEPARTAMENTO DE PERTENENCIA	Dep. De Ingeniería de la Información y de las Comunicaciones
CENTRO/INSTITUTO/UNIVERSIDAD/ORGANISMO DE PERTENENCIA	Universitat Autònoma de Barcelona



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INVESTIGADOR PRINCIPAL

NOMBRE	TITULACIÓN
Sergi Robles	Doctor en Informática

TRAYECTORIA PROFESIONAL

Doctor ingeniero en Informática por la UAB (2002). Profesor titular en el Departamento de Ingeniería de la Información y de las Comunicaciones de la UAB, donde combina investigación y docencia. Sus líneas actuales de investigación se centran en el campo de la seguridad y las aplicaciones de las redes oportunistas. Cuenta con extensa experiencia en publicaciones, dirección de tesis y dirección de proyectos en este campo. Es docente en asignaturas relacionadas con las redes de computadores y la seguridad computacional.

WEB Y REDES SOCIALES



MIEMBROS DEL EQUIPO

Borrell Viader, Joan Navarro Arribas, Guillermo	Herrera Joancomarti, Jordi Robles Martínez, Sergi	Marti Escale, Ramon
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Security of Network and Distributed Applications (SeNDA)

Características generales

Características del Equipo de Investigación

Características de la Investigación

LÍNEAS Y ÁREAS DE INVESTIGACIÓN	
 Security of Network and Distributed Applications (SeNDA)	PRINCIPALES LÍNEAS DE INVESTIGACIÓN
ÁREAS DE INTERÉS	Seguridad de redes Criptografía
PRIVACIDAD	Sanitización y anonimización de datos Tecnologías de potenciadores de la privacidad (PET) Redes de comunicación privada
OTRAS	Tecnología Blockchain y Criptomonedas



PUBLICACIONES RELACIONADAS DESTACADAS

PUBLICACIONES AÑO 2020

D. Chen, C. Borrego, and G. Navarro-Arribas, "A privacy-preserving routing protocol using mix networks in opportunistic networks," *Electronics*, vol. 9, no. 11, p. 1754, 2020

S. K. Kaya, G. Navarro-Arribas, and V. Torra, "Dynamic features spaces and machine learning: Open problems and synthetic data sets," in *Integrated Uncertainty in Knowledge Modelling and Decision Making*, V.-N. Huynh, T. Entani, C. Jeenanunta, M. Inuiguchi, and P. Yenradee, Eds., ser. *Lecture Notes in Computer Science*, Springer International Publishing, 2020, 125–136

C. Pérez-Solà, A. Ranchor-Pedrosa, J. Herrera-Joancomartí, G. Navarro-Arribas, and J. Garcia-Alfaro, "Lockdown: Balance availability attack against lightning network channels," in *Financial Cryptography and Data Security*, J. Boneau and N. Heninger, Eds., ser. *Lecture Notes in Computer Science*, Springer International Publishing, 2020, 245–263

V. Torra, G. Navarro-Arribas, and E. Galván, "Explaining recurrent machine learning models: Integral privacy revisited," in *Privacy in Statistical Databases*, J. Domingo-Ferrer and K. Muralidhar, Eds., ser. *Lecture Notes in Computer Science*, Springer International Publishing, 2020, pp. 62–73.

V. Torra and G. Navarro-Arribas, "Fuzzy meets privacy: A short overview," in *Intelligent and Fuzzy Techniques: Smart and Innovative Solutions*. INFUS 2020, C. Kahraman, S. Cevik Onar, B. Oztaysi, I. U. Sari, S. Cebi, and A. C. Tolga, Eds., ser. *Advances in Intelligent Systems and Computing*, Springer International Publishing, 2020, 3–9

PUBLICACIONES AÑO 2019

D. Chen, G. Navarro-Arribas, C. Perez-Sola, and J. Borrell, "Message anonymity on predictable opportunistic networks," *Journal of Ambient Intelligence and Humanized Computing*, 2019.

C. Perez-Sola, S. Delgado-Segura, G. Navarro-Arribas, and J. Herrera-Joancomartí, "Another coin bites the dust: An analysis of dust in utxo-based cryptocurrencies," *Royal Society Open Science*, vol. 6, no. 1, Jan. 2019.

J. Herrera-Joancomartí, G. Navarro-Arribas, A. Ranchor-Pedrosa, C. Pérez-Solà, and J. Garcia-Alfaro, "On the difficulty of hiding the balance of lightning network channels," in *Proceedings of the 2019 ACM Asia Conference on Computer and Communications Security*, ser. *Asia CCS '19*, Auckland, New Zealand: ACM, 2019, pp. 602–612

D. Chen, G. Navarro-Arribas, C. Pérez-Solà, and J. Borrell, "A review of message anonymity on predictable opportunistic networks," in *Actas de las V Jornadas Nacionales de Investigación en Ciberseguridad (JNIC 2019)*, Cáceres, Spain: Universidad de Extremadura. Servicio de Publicaciones, Jun. 2019, pp. 316–317.

V. Torra, G. Navarro-Arribas, and K. Stokes, "Data privacy," in *Data Science in Practice*, ser. *Studies in Big Data*, A. Said and V. Torra, Eds., vol. 46, Springer, 2019.

F. Zola, C. Pérez-Solà, J. E. Zubia, M. Eguimendia and J. Herrera-Joancomartí, "Kriptosare.gen, a Dockerized Bitcoin Testbed: Analysis of Server Performance," in *2019 10th IFIP International Conference on New Technologies, Mobility and Security (NTMS)*, pp. 1-5, 2019. ISSN: 2157-4960.DOI: 10.1109/NTMS.2019.8763809.

Cristina Pérez-Solà and Jordi Herrera-Joancomartí, "Improving Classification of Interlinked Entities Using Only the Network Structure," *Intl Journal of Software Engineering and Knowledge Engineering*, vol. 29, no. 1, pp. 63-91, 2019

C Borrego, J Borrell, S Roble, Efficient broadcast in opportunistic networks using optimal stopping theorys - *Ad Hoc Networks*, 2019

C Borrego, J Borrell, S Robles, Hey, influence! Message delivery to social central nodes in social opportunistic networks, *Computer Communications* 137, 81-91, 2019

PUBLICACIONES AÑO 2018

C. Perez-Sola, S. Delgado-Segura, G. Navarro-Arribas, and J. Herrera-Joancomartí, "Double-spending prevention for bitcoin zero-confirmation transactions," *International Journal of Information Security*, vol. 18, no. 4, pp. 451–463, 2018

V. Torra, A. Jonsson, G. Navarro-Arribas, and J. Salas, "Synthetic generation of spatial graphs," *International Journal of Intelligent Systems*, vol. 33, no. 12, pp. 2364–2378, 2018.

S. Delgado-Segura, C. Pérez-Solà, J. Herrera-Joancomartí, and G. Navarro-Arribas, "Bitcoin private key locked transactions," *Information Processing Letters*, vol. 140, pp. 37–41, 2018

S. Delgado-Segura, C. Pérez-Solà, J. Herrera-Joancomartí, G. Navarro-Arribas, and J. Borrell, "Cryptocurrency networks: A new p2p paradigm," *Mobile Information Systems*, vol. 2018, 16 pages, 2018

S. Delgado-Segura, C. Perez-Sola, J. Herrera-Joancomartí, and G. Navarro-Arribas, "Analysis of the bitcoin UTXO set," in *Financial Cryptography and Data Security. FC 2018 (The 5th Workshop on Bitcoin and Blockchain Research, Financial Crypto 2018)*, ser. *Lecture Notes in Computer Science*, vol. 10958, Springer, 2018.

V. Torra and G. Navarro-Arribas, "Probabilistic metric spaces for privacy by design machine learning algorithms: Modeling database changes," in *Data Privacy Management, Cryptocurrencies and Blockchain Technology. DPM 2018, CBT 2018*, ser. *Lecture Notes in Computer Science*, vol. 11025, Springer, 2018

C. Perez-Sola, S. Delgado-Segura, J. Herrera-Joancomartí, and G. Navarro-Arribas, "Analysis of the SegWit adoption in Bitcoin," in *XV Reunión Española sobre Criptología y Seguridad de la Información*, P. Garcia Teodoro and R. Barragán Gil and N.M. Fuentes Garcia, Eds., Universidad de Granada, 2018, pp. 230–233

S. Delgado-Segura, C. Perez-Sola, G. Navarro-Arribas, and J. Herrera-Joancomartí, "A review of a fair protocol for data trading based on bitcoin transactions," in *Actas de las Cuartas Jornadas Nacionales de Investigación en Ciberseguridad*, U. Zurutza, M. Iturbe, E. Ezpeleta, and I. Garitan, Eds., Servicio Editorial de Mondragon Unibertsitatea, 2018, pp. 105–106

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Adrián Sánchez-Carmona, Frédéric Guidec, Pascale Launay, Yves Mahéo, Sergi Robles, Filling in the missing link between simulation and application in opportunistic networking, *Journal of Systems and Software*, Volume 142, 2018, Pages 57-72,

PUBLICACIONES AÑO 2017

S. Delgado-Segura, C. Pérez-Solà, G. Navarro-Arribas, and J. Herrera-Joancomartí, "A fair protocol for data trading based on bitcoin transactions," *Future Generation Computer Systems*, 2017

V. Torra, G. Navarro-Arribas, D. Sanchez-Charles, and V. Muntés-Mulero, "Provenance and privacy," in *Modeling Decisions for Artificial Intelligence: 14th International Conference, MDAI 2017, Kitakyushu, Japan, October 18-20, 2017*

D. Chen, G. Navarro-Arribas, and J. Borrell, "On the applicability of onion routing on predictable delaytolerant networks," in *2017 IEEE 42nd Conference on Local Computer Networks (LCN)*, 2017, pp. 575–578.

V. Torra, D. Abril, and G. Navarro-Arribas, "Fuzzy meets privacy," in *The 14th International Conference on Modeling Decisions for Artificial Intelligence. USB Proceedings.*, Kitakyushu, Japan (October 18 - 20, 2017), 2017, pp. 108–117



PUBLICACIONES RELACIONADAS DESTACADAS

V. Torra and G. Navarro-Arribas, "Big data privacy and anonymization," in *Privacy and Identity Management. Facing up to Next Steps*, ser. IFIP AICT Tutorials, A. Lehmann, D. Whitehouse, S. Fischer-Hübner, L. Fritsch, and C. Raab, Eds., vol. 498, Springer, 2017, pp. 15–26.

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Alvarez-Díaz, Herrera-Joancomartí and Caballero-Gil, "Smart Contracts Based on Blockchain for Logistics Management," In *Proceedings of the 1st International Conference on Internet of Things and Machine Learning*, pp. 73:1--73:8, 2017

Joan Pahisa-Solé and Jordi Herrera-Joancomartí, "Testing an $\{A\}\{A\}\{C\}$ system that transforms pictograms into natural language with persons with cerebral palsy," *Assistive Technology*, vol. 0, no. 0, pp. 1-9, 2017

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A. Antunez-Veas and G. Navarro-Arribas, "Onion routing in deterministic delay tolerant networks," in *Foundations and Practice of Security*, J. Garcia-Alfaro, E. Kranakis, and G. Bonfante, Eds., ser. Lecture Notes in Computer Science, Springer International Publishing, 2016, pp. 303–310

V. Torra, G. Navarro-Arribas, and K. Stokes, "An overview of the use of clustering for data privacy," in *Unsupervised Learning Algorithms*, M. Celebi and K. Aydin, Eds., Springer, Apr. 2016, pp. 237–251,

Jordi Herrera-Joancomartí and Cristina Pérez-Solà. Privacy in bitcoin transactions: New challenges from blockchain scalability solutions. In *Modeling Decisions for Artificial Intelligence: 13th International Conference, MDAI 2016*, pages 26–44. Springer International Publishing, Sep. 2016

Sergi Delgado-Segura, Cristian Tanas, and Jordi Herrera-Joancomartí-. Reputation and reward: Two sides of the same bitcoin. *Sensors*, 16(6):776, 2016

Cristian Tanas, Sergi Delgado-Segura, and Jordi Herrera-Joancomartí. An Integrated Reward and Reputation Mechanism for MCS Preserving Users' Privacy, pages 83–99. Springer International Publishing, Cham, 2016.

Adrián Sánchez-Carmona, Sergi Robles, Carlos Borrego, PrivHab: A privacy preserving georouting protocol based on a multiagent system for podcast distribution on disconnected areas, *Ad Hoc Networks*, Volume 53, 2016, Pages 110-122, ISSN 1570-8705,

Sánchez-Carmona, A., Robles, S., and Borrego, C. (2016) Identity-based access control for pro-active message's DTN. *Security Comm. Networks*, 9: 2323– 2337. doi: 10.1002/sec.1494.

Adrián Sánchez-Carmona, Sergi Robles, Carlos Borrego, PrivHab+: A secure geographic routing protocol for DTN, *Computer Communications*, Volume 78, 2016, Pages 56-73, ISSN 0140-3664,



PROYECTOS RELEVANTES

TIN2017-87211-R, Plataforma Segura Crowd2Crowd para Aplicaciones de Transporte Inteligente Oportunistas y Descentralizadas, IP Sergi Robles, 2018-2020

TIN2014-55243P, Seguridad para Mobile Crowd Sensing con protocolos oportunistas, IP Guillermo Navarro, Sergi Robles, 2015-2017

TIN2010-15764, Seguridad en entornos móviles con conectividad intermitente, IP Joan Borrell, 2011 - 2013

RTC-2014-2546-7, Sistema de crowdsourcing para observación electoral, IP Guillermo Navarro, 2014 - 2016

RTC-2014-2552-7, Desarrollo de un mecanismo de aprovisionamiento de certificados digitales para entornos móviles, IP Guillermo Navarro, 2014 - 2016

TIN2011-27076-C03, CO-PRIVACY, Sustainable Privacy for a Sustainable Information Society, IP Josep Domingo-Ferrer, 2012-2014

IPT-2012-0598-430000, Ubiquitous Secure Electronic Voting (u-SEV): Sistema de voto electrónico seguro para entornos sin infraestructuras de telecomunicaciones fiables, IP Joan Borrell, 2012-2014

FP7 262608, Data without Boundaries - DwB, IP Roxane Silberman, 2011-2015

TSI-020100-2009-115, Protocolos de Red para el Cielo Único Europeo (PROSES), IP Sergi Robles, 2009-2011

CSD2007-00004 CONSOLIDER, Advanced Research on Information Security and Privacy (ARES), IP Josep Domingo-Ferrer, 2007-2014

TSI2006-03481, Diseño e implementación de una solución global para el soporte de servicios críticos en situaciones de emergencia, IP Sergi Robles, 2006-2009