Nikos Fotiou

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Work Experience

2022 - now   CEO, ExcID

2014 - 2022 Post-doc researcher, Mobile Multimedia Laboratory of the Athens University of Economics and Business

Studies

2008 - 2014 Athens University of Economics and Business, Department of Informatics, Ph.D. in Computer Science

2005 - 2006 Royal Institute of Technology (KTH), Sweden, M.Sc. in Internetworking

2000 - 2005 University of the Aegean, Department of Information and Communication Systems Engineering, Diploma in ICS Engineering

Professional activities

- Reviewer for EU ERC program
- Reviewer for the Croatian Science Foundation
- External expert for the project "Smart-IoT Based Autonomous Crowd", Funded by the Ministry of Education, Saudi Arabia
- Topic editor of MDPI Sensors
- Guest editor of MDPI Future Internet (guest edited SI on "Information-Centric Networking")
- TPC member of BLOCKCHAIN 2023, IoTDBS 2023, IEEE CSCN 2022, GIIS 2022, IEEE HotICN 2022, BLOCKCHAIN 2022, ACM ICN 2022, IoTDBS 2022, IFIP Networking DI2F 2021, IEEE ICBC 2021, IoTDBS 2021, IEEE GIoTS, 2020, NDSS-DISS 2020, IEEE ISCC 2020, IEEE Globecom 2018, IEEE ISCC 2017, IEEE Globecom 2017

Research Projects

With ExcID

12.2022 - now   EU-H2020 open call project, IMPERIAL (funded by IoT-NGIN)

12.2022 - now   EU-H2020 open call project, DARE (funded by i4TRUST)

With AUEB

04.2022 - 10.2022   EU-H2020 open call project, SELECTSHARE (funded by NGI DAPSI)

04.2022 - 10.2022   EU-H2020 open call project, SECOND (funded by ngiatlanitc.eu)

12.2021 - 05.2022	EU-H2020 open call project, ZeroTrustVC (funded by eSSIF-lab)
11.2020 - 06.2021	EU-H2020 open call project, SCN4NDN (funded by ngiatlanitc.eu)
10.2020 - 04.2021	MLDHT for IPFS, funded by ProtocolLabs, USA
01.2018 - 12.2020	EU-H2020 SOFIE
04.2018 - 12.2018	EU-H2020 open call project, UNSURPASSED
02.2018 - 04.2018	EU-H2020 open call project, BeSMART
06.2017 - 10.2018	EU-H2020 open call project, ACHILLES
08.2015 - 12.2017	EU-H2020, POINT
02.2014 - 07.2015	GR-GSRT/ARISTEIA II: Information-Centric future mobile and wireless Access Networks (I-CAN)
08.2011 - 11.2013	ESA ϕSAT: The Role of Satellite in Future Internet Services
09.2010 - 02.2013	EU-FP7, PURSUIT: Publish-Subscribe Internet Technology
01.2008 - 09.2010	EU-FP7, PSIRP: Publish-Subscribe Internet Routing Paradigm
01.2008 - 06.2011	EU-FP7 EURO-NF: Anticipating the Network of the Future

Awards

2022 Best paper award for the paper "Capabilities-based access control for IoT devices using Verifiable Credentials", in IEEE Symposium on Security and Privacy Workshops, Workshop on the Internet of Safe Things (SafeThings), 2022

2018 Best paper award for the paper "Interacting with the Internet of Things Using Smart Contracts and Blockchain Technologies" in SpaCCS 2018, Melbourne, Australia

2018 Third prize of the H2020-SoftFIRE challenge in the programmability category, Paris, France

2017 Best demo award for the demo "ICN enabling CoAP Extensions for IP based IoT devices" in the 4th ACM Conference on Information-Centric Networking, Berlin, Germany

2016 Research Impact Award of the ennovation competition on entrepreneurship and innovations

2012 Best paper award for the paper "Access Control Enforcement Delegation for Information-Centric Networking Architecture", in ACM SIGCOMM Workshop on ICN Helsinki, Finland

2010 Best student paper award for the paper "Fighting Spam in Publish/Subscribe Networks Using Information Ranking", in 6th Euro-NF Conference on NGI, Paris, France

Publications

Citations indices

Journal Publications

1. B Alzahrani, N Fotiou, "Securing SDN-Based IoT Group Communication," in Future Internet, MDPI, 2022
2. N. Fotiou, I. Pittaras, V.A. Siris, G.C. Polyzos, "A privacy-preserving statistics marketplace using local differential privacy and blockchain: An application to smart-grid measurements sharing," in Blockchain: Research and Applications, Elsevier, 2021
3. I. Pittaras, N. Fotiou, V.A. Siris, G.C. Polyzos, "Beacons and blockchains in the mobile gaming ecosystem: A feasibility analysis," in Sensors, MDPI, 2021
4. Y. Thomas, N. Fotiou, S. Toumpis, G.C. Polyzos, "Improving mobile ad hoc networks using hybrid IP-Information Centric Networking," Computer Communications, Elsevier, 2020
5. V.A. Siris, D. Dimopoulos, N. Fotiou, S. Voulgaris, G.C. Polyzos, "Decentralized authorization in constrained IoT environments exploiting interledger mechanisms", In Computer Communications, Elsevier, 2020
6. B Alzahrani, N Fotiou, "Enhancing internet of things security using software-defined networking," in Journal of Systems Architecture, Springer, 2022
7. V.A. Siris, P. Nikander, S. Voulgaris, N. Fotiou, D. Lagutin, G.C. Polyzos, "Interledger Approaches", In Access, IEEE, 2019
8. N. Fotiou, G.C. Polyzos, "Name-Based Security for Information-Centric Networking Architectures," Future Internet, MDPI, 2019
9. S. Voulgaris, N. Fotiou, V.A. Siris, G.C. Polyzos, M. Jaatinen, Y. Oikonomidis, "Blockchain Technology for Intelligent Environments," MDPI Future Internet, 2019
10. Y. Kortesniemi, D. Lagutin, T. Elo, N, Fotiou, "Improving the Privacy of IoT with Decentralised Identifiers (DIDs)", Journal of Computer Networks and Communications, Hindawi, 2019
11. V.A. Siris, N. Fotiou, A. Mertzianis, G.C. Polyzos, "Smart Application-aware IoT Data Collection", Journal of Reliable Intelligent Environments, Springer, 2019
12. N. Fotiou, B.A. Alzahrani, "Rendezvous-based access control for information-centric architectures," Int J Network Mgmt, Springer, vol. 28, no. 1, 2018
13. T. de Cola, A. Ginesi, G. Giambene, G.C. Polyzos, V.A. Siris, N. Fotiou, Y. Thomas, "Network and Protocol Architectures for Future Satellite Systems," Foundations and Trends in Networking, vol. 12, no. 1-2, pp. 1-161, 2017
14. N. Fotiou, G. Xylomenos "An Improved Scheme for Protecting Medical Data in Public Clouds", Communications in Computer and Information Science, Springer, vol. 736, pp. 66-79, 2017
15. N. Fotiou, A. Machas, G.C. Polyzos, G. Xylomenos, "Access control as a service for the Cloud", Journal of Internet Services and Applications, Springer, vol. 6, no. 1, pp. 1-15, 2015
16. G.C. Polyzos, N. Fotiou "Building a reliable Internet of Things using Information-Centric Networking", Journal of Reliable Intelligent Environments, Springer, vol. 6, no. 1, pp 47-58, 2015

17. N. Fotiou, D. Trossen, G.F. Marias, A. Kostopoulos, G.C. Polyzos, "Enhancing information lookup privacy through homomorphic encryption," Security and Communication Networks, Wiley, vol. 7, no. 4, pp. 700-713, 2014
18. P.Zhang, N. Fotiou, B.E. Helvik, G.F. Marias, G.C. Polyzos, "Analysis of the effect of InfoRanking on content pollution in peer-to-peer systems," Security and Communication Networks, Wiley, vol. 7, no. 4, pp. 700-713, 2014
19. C. Doukas, N. Fotiou, G.C. Polyzos, I. Maglogiannis, "Cognitive and Context Aware Assistive Environments Using Future Internet Technologies," Universal Access in the Information Society, Springer, vol. 13, no. 1, pp. 59-72, 2014
20. N. Fotiou, K. Katsaros, G.C. Polyzos, M. Sarela, D. Trossen, G. Xylomenos, "Handling Mobility in Future Publish-Subscribe Information-Centric Networks," Telecommunication Systems, Springer, vol. 53, no. 3, pp. 299-314, 2013
21. G. Xylomenos, C. Ververidis, N. Fotiou, C. Tsilopoulos, X. Vasilakos, K. Katsaros, G.C. Polyzos, "A Survey of Information-Centric Networking Research," IEEE Communications Surveys & Tutorials, vol. 16, no. 2, pp. 1024-1049, 2013
22. N. Fotiou, G.C. Polyzos, D. Trossen, "Illustrating a Publish-Subscribe Internet Architecture," Telecommunication Systems, Springer, vol. 51, no. 4, pp. 233-245, 2012

Book Articles

1. T.de Cola, A. Ginesi, G. Giambene, G. C. Polyzos, V. A. Siris, N. Fotiou, Y. Thomas, "Network and Protocol Architectures for Future Satellite Systems," in Foundations and Trends in Networking, Now Publishers, 2017
2. N. Fotiou, G.F. Marias, G.C. Polyzos, "Publish-Subscribe Internetworking Security Aspects," in Trustworthy Internet, G. Bianchi, L. Salgarelli, N. Blefari-Melazzi, eds., Springer, 2011

Refereed International Conference and Workshop Papers

1. N. Fotiou, E. Faltaka, V. Kalos, A. Kefala, I. Pittaras, V. A. Siris, G. C. Polyzos, "Continuous authorization over HTTP using Verifiable Credentials and OAuth 2.0", in Open Identity Summit 2022 (OID2022), 2022
2. N. Fotiou, V.A. Siris, G.C. Polyzos, Y. Kortesniemi, D. Lagutin, "Capabilities-based access control for IoT devices using Verifiable Credentials", in IEEE Symposium on Security and Privacy Workshops, Workshop on the Internet of Safe Things (SafeThings), 2022
3. N. Fotiou, V.A. Siris, G.C. Polyzos, "Capability-based access control for multi-tenant systems using OAuth 2.0 and Verifiable Credentials," in International Conference on Computer Communications and Networks (ICCCN), Athens, Greece, 2021
4. N. Fotiou, V.A. Siris, G.C. Polyzos, "Enabling self-verifiable mutable content items in IPFS using Decentralized Identifiers," in DI2F: Decentralising the Internet with IPFS and Filecoin, IFIP Networking, Virtual, 2021
5. N. Fotiou, Y. Thomas, V.A. Siris, G.C. Polyzos, "Securing named data networking routing using decentralized identifiers", in SARNET-21 workshop, IEEE International Conference on High Performance Switching and Routing (HPSR), Paris, France, June 2021
6. C. Karapapas, I. Pittaras, N. Fotiou, G.C. Polyzos, "Ransomware as a Service using Smart Contracts and IPFS," in IEEE ICBC 2020, Toronto, Canada, 2020
7. N. Fotiou, I. Pittaras, V.A. Siris, S. Voulgaris, G.C. Polyzos, "OAuth 2.0 authorization using blockchain-based tokens," in NDSS workshop on Decentralized IoT Systems and Security (DISS), San Diego, CA, USA, 2020

8. S. Voulgaris, N. Fotiou, V.A. Siris, G.C. Polyzos, S. Karachontzitis, A. Tomaras, "Hierarchical Blockchain Topologies for Quality Control in Food Supply Chains," in Proc. of European Conference on Networks and Communications (EUCNC), Dubrovnik, Croatia, 2020

9. V.A. Siris, M. Tsenos, D. Dimopoulos, N. Fotiou, G.C. Polyzos, "Decentralized Interledger Gateway Architectures in Authorization Scenarios with Multiple Ledgers," in Proc. of Global IoT Summit, Dublin, Ireland, 2020

10. N. Fotiou, V.A. Siris, M. Marchese, F. Davoli, L. Boero, G.C. Polyzos, "Exploiting Satellite Broadcast despite HTTPS," in IEEE lobal Communications Conference (GLOBECOM), Hawaii, USA, 2019

11. V.A. Siris, D. Dimopoulos, N. Fotiou, S. Voulgaris, G.C. Polyzos, "IoT Resource Access utilizing Blockchains and Trusted Execution Environments," IEEE Global IoT Summit (GIoTS), Aarhus, Denmark, 2019

12. V.A. Siris, D. Dimopoulos, N. Fotiou, S. Voulgaris, G.C. Polyzos, "Trusted D2D-based IoT Resource Access using Smart Contracts," in 20th IEEE International Symposium on a World of Wireless, Mobile and Multimedia Networks (IEEE WoWMoM 2019) Washington DC, USA, 2019

13. N. Fotiou, I. Pitarras, V.A. Siris, S. Voulgaris, G.C. Polyzos, "Secure IoT access at scale using blockchains and smart contracts," in 8th IEEE WoWMoM Workshop on the Internet of Things: Smart Objects and Services, IoT-SoS 2019, Washington DC, USA, 2019

14. V.A. Siris, D. Dimopoulos, N. Fotiou, S. Voulgaris, G.C. Polyzos, "OAuth 2.0 meets Blockchain for Authorization in Constrained IoT Environments," IEEE 5th World Forum on Internet of Things, Limerick, Ireland, 2019

15. V.A. Siris, D. Dimopoulos, N. Fotiou, S. Voulgaris, G.C. Polyzos, "Interledger Smart Contracts for Decentralized Authorization to Constrained Things," 2nd Workshop on Cyptocurrencies and Blockchains for Distributed Systems (CryBlock 2019), co-located with IEEE INFOCOM 2019, Paris, France, 2019

16. N. Fotiou, V. A. Siris, S. Voulgaris, G.C. Polyzos, D. Lagutin "Bridging the cyber and physical worlds using blockchains and smart contracts" in NDSS workshop on Decentralized IoT Systems and Security (DISS), San Diego, CA, USA, 2019

17. D. Lagutin, Y, Kortesniemi, N. Fotiou, V.A. Siris, "Enabling Decentralised Identifiers and Verifiable Credentials for Constrained Internet-of-Things Devices using OAuth-based Delegation," NDSS Workshop on Decentralized IoT Systems and Security (DISS), San Diego, CA, USA, 2019

18. N. Fotiou, V. A. Siris, G.C. Polyzos, "Interacting with the Internet of Things Using Smart Contracts and Blockchain Technologies, " Proc. of Security, Privacy, and Anonymity in Computation, Communication, and Storage 2018 (SpaCCS 2018), Melbourne, Australia, 2018

19. N. Fotiou, G.C. Polyzos, "Authentication and Authorization for Interoperable IoT Architectures", Proc. of the First ESORICS Workshop on Emerging Technologies for Authorization and Authentication, Valencia, Spain, 2018

20. N. Fotiou, V. A. Siris, A. Mertzianis, G.C. Polyzos, "Smart IoT Data Collection", Proc. Seventh IEEE WoWMoM Workshop on the Internet of Things: Smart Objects and Services (IoT-SoS), Chania, Greece, 2018

21. N. Fotiou, G.C. Polyzos, "Smart contracts for the Internet of Things: opportunities and challenges", Proc. of the European Conference on Networks and Communications (EUCNC), Ljubljana, Slovenia, 2018

22. N. Fotiou, G. C. Polyzos, "Blockchain-assisted Information Distribution for the Internet of Things", Proc. of the 4th International Workshop on Information Integration in Cyber Physical Systems (IICPS 2017), San Diego, California, USA, 2017

23. N. Fotiou, V A. Siris, G. Xylomenos, G. C. Polyzos, K. V. Katsaros, G. Petropoulos "Edge-ICN and its application to the Internet of Things", Proc. of the IFIP Networking Workshop on Information-Centric Fog Computing (ICFC), Stockholm, Sweden, 2017

24. N. Fotiou, G. Xylomenos, G. C. Polyzos, "Securing Information-Centric Networking without negating Middleboxes", Proc. of the 8th IFIP International Conference on New Technologies, Mobility and Security (NTMS), Larnaca, Cyprus, 2016

25. N. Fotiou, G. C. Polyzos, "Decentralized name-based security for content distribution using blockchains", Proc. of the Multimedia Streaming in Information-Content-Centric Networks (MuSIC) Workshop, 2016

26. N. Fotiou, G. C. Polyzos, "Securing Content Sharing over ICN", Proc. of the 3rd ACM Conference on Information-Centric Networking (ACM-ICN 2016), Kyoto, Japan, 2016

27. N. Fotiou, T. Kotsonis, G. F. Marias, G. C. Polyzos, "Access Control for the Internet of Things", Proc. of the International Workshop on Secure Internet of Things 2016 (SIoT 2016), Heraklion, Greece, 2016

28. N. Fotiou, G. Xylomenos, "Protecting medical data stored in public Clouds", Proc. of the 2nd International Conference on Information and Communication Technologies for Ageing Well and e-Health (ICT4AWE), Rome, Italy, 2016

29. D. Trossen, M. J. Reed, J. Riihijärvi, M. Georgiades, N. Fotiou, G. Xylomenos, "iP Over ICN - The Better IP?", Proc. of the European Conference on Networks and Communications (EUCNC), Paris, France, 2015

30. V. A. Siris, N. Fotiou, D. Dimopoulos, G. C. Polyzos, "I-CAN: Information-Centric Access Networking – Architecture and Experiments", Proc. of the European Conference on Networks and Communications (EUCNC), Paris, France, 2015

31. N. Fotiou, G. C. Polyzos, "Enabling NAME-based security and trust," Proc. of the 9th IFIP WG 11.11 International Conference on Trust Management, Hamburg, Germany, 2015

32. N. Fotiou, Y. Thomas, V. A. Siris, G. C. Polyzos, "Security Requirements and Solutions for Integrated Satellite-Terrestrial Information-Centric Networks," Proc. of the 7th Advanced Satellite Multimedia Systems Conference, 13th Signal Processing for Space Communications Workshop ASMS/SPSC, Livorno, Italy, 2014

33. V.G. Douros, N. Fotiou, C. G. Polyzos, "Fighting packet storms in mobile networks with information-centrism," Q-ICN Workshop, Rhodes, Greece, 2014

34. N. Fotiou and C. G. Polyzos, "Realizing the Internet of Things using Information-Centric Networking," Q-ICN Workshop, Rhodes, Greece, 2014

35. N. Fotiou, S. Arianfar, M. Sarela G.C. Polyzos, "A framework for privacy analysis of ICN architectures," Proc. Second Annual Privacy Forum, APF 2014, Athens, Greece, 2014

36. N. Fotiou, A. Machas, G.C. Polyzos and G. Xylomenos, "Access control delegation for the Cloud," Proc. IEEE CrossCloud Workshop 2014, Toronto, Canada, 2014

37. M. Giannikos, K. Kokoli, N. Fotiou, G. Marias and G.C. Polyzos, "Towards Secure and Context-Aware Information Lookup for the Internet of Things," Proc. International Conference on Computing, Networking and Communications (ICNC 2013), San Diego, USA, 2013

38. N. Fotiou, G.F. Marias, G.C. Polyzos, "Access Control Enforcement Delegation for Information-Centric Networking Architectures," Proc. of ACM SIGCOMM Workshop on Information-Centric Networking (ICN-2012), Helsinki, Finland, August 2012 (Best paper award)

39. G.F. Marias, N. Fotiou, G.C. Polyzos, "Efficient information lookup for the Internet of Things," Proc. First IEEE WoWMoM Workshop on the Internet of Things: Smart Objects and Services, San Francisco, CA, USA, June 2012

40. N. Fotiou, G.F. Marias, G.C. Polyzos, "Fighting phishing the information-centric way," Proc. Fifth IFIP International Conference on New Technologies, Mobility and Security (NTMS 2012), Istanbul, Turkey, May 2012

41. K. V. Katsaros, N. Fotiou, X. Vasilakos, C. N. Ververidis, C. Tsilopoulos, G. Xylomenos, G.C. Polyzos, "On Inter-domain Name Resolution for Information-Centric Networks," IFIP Networking 2012, Prague, Czech Republic, May 2012

42. N. Fotiou, G.F. Marias, G.C. Polyzos, P. Szalachowsk, Z. Kotulski, M. Niedermeier, X. He, H. de Meer, "Towards Adaptable Security for Energy Efficiency in Wireless Sensor Networks", Proc. Wireless World Research Forum (WWRF) Meeting 28, Athens, Greece, April 2012

43. C. Doukas, N. Fotiou, G.C. Polyzos, I. Maglogiannis, "Context-Aware Delivery of Information in Assistive Environments utilizing Future Internet Technologies," Proc. 4th International Conference on PErvasive Technologies Related to Assistive Environments, Crete, Creece, May 2011

44. N. Fotiou, P. Nikander, D. Trossen, G.C. Polyzos, "Developing Information Networking Further: From PSIRP to PURSUIT," Proc. 7th International ICST Conference on Broadband Communications, Networks, and Systems, Athens, Greece, October 2010

45. N. Fotiou, G.F. Marias, G.C. Polyzos, "Security Aspects of a Clean Slate Information Oriented Internet Architecture," Proc. 21st International Tyrrhenian Workshop on Digital Communications, Ponza, Italy, September 2010

46. N. Fotiou, G.F. Marias, G.C. Polyzos, "Towards a Secure Rendezvous Network for Future Publish/Subscribe Architectures," Proc. 3rd Future Internet Symposium 2010, Berlin, Germany, September 2010

47. N. Fotiou, G.F. Marias, G.C. Polyzos, "Fighting Spam in Publish/Subscribe Networks Using Information Ranking," Proc. 6th Euro-NF Conference on Next Generation Internet (NGI), Paris, France, June 2010 (Best student paper award)

48. N. Fotiou, G.F. Marias, G.C. Polyzos, "Information Ranking in Content-Centric Networks," Proc. Future Network and MobileSummit 2010, Florence, Italy, June 2010

49. K. Katsaros, N. Fotiou, G.C. Polyzos, G. Xylomenos, "Overlay Multicast Assisted Mobility for Future Publish/Subscribe Networks," Proc. ICT Mobile Summit, Santander, Spain, June 2009

50. K. Katsaros, N. Fotiou, G.C. Polyzos, G. Xylomenos, "Supporting Mobile Streaming Services in Future Publish/Subscribe Networks," Proc. Wireless Telecommunications Symposium (WTS 2009), Prague, Czech Republic, April 2009

51. N. Fotiou, G.C. Polyzos, D. Trossen, "Illustrating a Publish-Subscribe Internet Architecture," Future Internet Architectures: New Trends in Service Architectures (2nd Euro-NF Workshop), June 2009

Tutorials

1. N. Fotiou, G. C. Polyzos, "ICN Privacy and Name based Security," 1st ACM conference on Information-centric Networking (ICN-2014), Paris, France, 2014

Posters

1. N. Fotiou, I. Pittaras, V. A. Siris, S. Voulgaris, G.C. Polyzos, "Securing IoT services using DLTs and Verifiable Credentials", in NDSS 2020, CA, USA, 2020
2. N. Fotiou, V. A. Siris, S. Voulgaris, G.C. Polyzos, "Enabling Opportunistic Users in Multi-Tenant IoT Systems using Decentralized Identifiers and Permissioned Blockchains," Proceedings of the 2nd International ACM Workshop on Security and Privacy for the Internet-of-Things (in conjunction with ACM CCS), 2019
3. N. Fotiou and C. G. Polyzos, "Towards name-based trust," IFIP Trust Management, Singapore, 2014

Demos

1. N. Fotiou, G. Xylomenos, G.C. Polyzos, H. Islam, D. Lagutin, T. Hakala, E. Hakala, "ICN enabling CoAP Extensions for IP based IoT devices" 4th ACM Conference on Information-Centric Networking, Berlin, Germany, 2014 (Best Demo award)

Teaching Experience

2019   Lecturer, M.Sc. course on blockchains and smart contracts, Athens University of Economics and Business, Greece

2008 - 2012 Teaching Assistant, Compilers, Undergraduate course, Athens University of Economics and Business

2009   Teaching Assistant, Distributed Systems, Postgraduate course, Athens University of Economics and Business

Research Interests

- Information Centric Networking
- Internet of Things
- Distributed Ledger Technologies
- User privacy
- Access control mechanisms
- Content integrity and provenance verification