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Research interests

SDN/NFV; AI/ML for Zero Touch Networking; Multi-Access Edge Computing; IoT & IIoT; 5G; 6G; Cloud Computing; Information-Centric Networking; Proactive & Mobile Caching; Distributed Computing & Network Architectures

Employment

Lecturer

School of Electrical, Electronic and Mechanical Engineering
Faculty of Engineering
1 Aug 2023 → 30 Jun 2024

Bristol Digital Futures Institute

Institutes
1 May 2019 → present

High Performance Networks Group (HPN)

United Kingdom
1 May 2019 → present

Research outputs

Blended Laboratory Design Using Raspberry Pi Pico for Digital Circuits and Systems

Davidson, Z. C. M., Dang, S. & Vasilakos, X., 1 Mar 2024, In: IEEE Transactions on Learning Technologies. 17, p. 1170-1183 14 p., 10423829.

iOn-Profiler: Intelligent Online Multi-Objective VNF Profiling With Reinforcement Learning

Vasilakos, X., Moazzeni, S., Bravalheri, A. C., Jaisudthi, P., Nejabati, R. & Simeonidou, D., 11 Jan 2024, In: IEEE Transactions on Network and Service Management. 21, 2, p. 1 1 p.

Deployment of VNF Service Chains with Grooming and Resilience in Elastic Optical Networks

Li, H., Assis, K. D. R., Bravalheri, A., Almeida, R. C., Vasilakos, X., Yan, S., Nejabati, R. & Simeonidou, D., 1 Dec 2023, In: Optical Fiber Technology. 81, 103482.

i-Profiler: Towards Multi-Objective Autonomous VNF Profiling with Reinforcement Learning

Jaisudthi, P., Moazzeni, S., Vasilakos, X., Nejabati, R. & Simeonidou, D., 29 Aug 2023, *IEEE INFOCOM 2023 - Conference on Computer Communications Workshops, INFOCOM WKSHPS 2023*. Institute of Electrical and Electronics Engineers (IEEE), 6 p. (IEEE Conference on Computer Communications Workshops).

Privacy Preservation in Kubernetes-based Federated Learning: A Networking Approach

Parra Ullauri, J. M., Gonzalez, L. F., Bravalheri, A. C., Hussain, R., Vasilakos, X., Vidal, I., Valera, F., Nejabati, R. & Simeonidou, D., 20 May 2023. 7 p.

Privacy Preservation in Kubernetes-based Federated Learning: A Networking Approach

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HELICON: Orchestrating low-latent & load-balanced Virtual Network Functions

Bunyakitanton, M., Vasilakos, X., Nejabati, R. & Simeonidou, D., 11 Aug 2022, *ICC 2022 - IEEE International Conference on Communications: IEEE International Conference on Communications, ICC 2022, Seoul, Korea, May 16-20, 2022*. Institute of Electrical and Electronics Engineers (IEEE), p. 353-358 6 p. (IEEE International Conference on Communications; vol. 2022-May).

On the design of a native Zero-touch 6G architecture

Uniyal, N., Parra Ullauri, J. M., Olowu, S., Bravalheri, A. C., Vasilakos, X., Nejabati, R. & Simeonidou, D., 23 Jun 2022.

Towards an intelligent 6G architecture: the case of jointly Optimised handover and Orchestration

Vasilakos, X., Olowu, S., Nejabati, R. & Simeonidou, D., 23 Jun 2022. 8 p.

Multi-Objective Deep Reinforcement Learning Assisted Service Function Chains Placement

Bi, Y., Meixner, C. C., Bunyakitanton, M., Vasilakos, X., Nejabati, R. & Simeonidou, D., Mar 2022, In: *IEEE Transactions on Network and Service Management*. 18, 4, p. 4134-4150 17 p.

Intelligent Mobile Handover Prediction for Zero Downtime Edge Application Mobility

Uniyal, N., Bravalheri, A. C., Featherstone, W., Vasilakos, X., Wu, S., Warren, D., Nejabati, R. & Simeonidou, D., 2 Feb 2022, *2021 IEEE Global Communications Conference, GLOBECOM 2021 - Proceedings*. Institute of Electrical and Electronics Engineers (IEEE), (2021 IEEE Global Communications Conference, GLOBECOM 2021 - Proceedings).

Edge-based 5G Network Architectures in support of Zero Downtime Mobility for Enterprise Applications

Warren, D., Vasilakos, X. & Featherstone, W., 6 Jun 2021, *2021 Optical Fiber Communications Conference and Exhibition, OFC 2021 - Proceedings*. Institute of Electrical and Electronics Engineers (IEEE), p. 1-3 3 p. 9489612. (2021 Optical Fiber Communications Conference and Exhibition, OFC 2021 - Proceedings).

A Novel Autonomous Profiling Method for the Next Generation NFV Orchestrators

Moazzeni, S., Jaisudthi, P., Bravalheri, A., Uniyal, N., Vasilakos, X., Nejabati, R. & Simeonidou, D., 1 Mar 2021, In: *IEEE Transactions on Network and Service Management*. 18, 1, p. 642-655 14 p., 9295398.

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Warren, D., Vasilakos, X. & Featherstone, W., 2021, *Optical Fiber Communication Conference, OFC 2021*. Optica Publishing Group (formerly OSA), (Optics InfoBase Conference Papers).

Towards Low-latent & Load-balanced VNF Placement with Hierarchical Reinforcement Learning

Vasilakos, X., Bunyakitanton, M., Nejabati, R. & Simeonidou, D., 2021, *2021 IEEE International Mediterranean Conference on Communications and Networking, MeditCom 2021*. Institute of Electrical and Electronics Engineers (IEEE), p. 162-167 6 p. (2021 IEEE International Mediterranean Conference on Communications and Networking, MeditCom 2021).

AUTO-3P: An autonomous VNF performance prediction & placement framework based on machine learning

Bunyakitanton, M., Pereira Da Silva, A., Vasilakos, X., Nejabati, R. & Simeonidou, D., 9 Nov 2020, In: *Computer Networks*. 181, 15 p., 107433.

Towards Zero Downtime Edge Application Mobility for Ultra-Low Latency 5G Streaming

Vasilakos, X., Featherstone, W., Uniyal, N., Bravalheri, A. C., Muqaddas, A. S., Solhjo, N., Warren, D., Moazzeni, S., Nejabati, R. & Simeonidou, D., Oct 2020, *Proceedings - 2020 IEEE Cloud Summit, Cloud Summit 2020*. Institute of Electrical and Electronics Engineers (IEEE), p. 25-32 8 p. 9283697. (Proceedings - 2020 IEEE Cloud Summit, Cloud Summit 2020).

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ElasticSDK: A Monitoring Software Development Kit for enabling Data-driven Management and Control in 5G

Vasilakos, X., Koksas, B., Izaldi, D. H., Nikaein, N., Schmidt, R., Ferdosian, N., Sari, R. F. & Cheng, R. G., Apr 2020, *Proceedings of IEEE/IFIP Network Operations and Management Symposium 2020: Management in the Age of Softwarization and Artificial Intelligence, NOMS 2020*. Institute of Electrical and Electronics Engineers (IEEE), 9110373. (Proceedings of IEEE/IFIP Network Operations and Management Symposium 2020: Management in the Age of Softwarization and Artificial Intelligence, NOMS 2020).

A Software-Defined IoT Device Management Framework for Edge and Cloud Computing

Mavromatis, A., Colman-Meixner, C., Silva, A. P., Vasilakos, X., Nejabati, R. & Simeonidou, D., Mar 2020, In: IEEE Internet of Things Journal. 7, 3, p. 1718-1735 18 p., 8883180.

Integrated methodology to cognitive network slice management in virtualized 5g networks

Vasilakos, X., Nikaein, N., Lorenz, D. H., Koksas, B. & Ferdosian, N., 2020

Enable Advanced QoS-Aware Network Slicing in 5G Networks for Slice-Based Media Use Cases

Wang, Q., Alcaraz-Calero, J., Ricart-Sanchez, R., Weiss, M. B., Gavras, A., Nikaein, N., Vasilakos, X., Giacomo, B., Pietro, G., Roddy, M., Healy, M., Walsh, P., Truong, T., Bozakov, Z., Koutsopoulos, K., Neves, P., Patachia-Sultanoiu, C., Iordache, M., Oproiu, E., Yahia, I. G. B., & 10 others Angelo, C., Zotti, C., Celozzi, G., Morris, D., Figueiredo, R., Lorenz, D., Spadaro, S., Agapiou, G., Aleixo, A. & Lomba, C., 1 Jun 2019, In: IEEE Transactions on Broadcasting. 65, 2, p. 444-453 10 p., 8667001.

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LL-MEC: Enabling Low Latency Edge Applications

Nikaein, N., Vasilakos, X. & Huang, A., 27 Nov 2018, *Proceedings of the 2018 IEEE 7th International Conference on Cloud Networking, CloudNet 2018*. Institute of Electrical and Electronics Engineers (IEEE), 8549500. (Proceedings of the 2018 IEEE 7th International Conference on Cloud Networking, CloudNet 2018).

IP over ICN Goes Live

Xylomenos, G., Thomas, Y., Vasilakos, X., Georgiades, M., Phinikarides, A., Doumanis, I., Porter, S., Trossen, D., Robitzsch, S., Reed, M. J., Al-Naday, M., Petropoulos, G., Katsaros, K., Xezonaki, M. E. & Riihijarvi, J., 20 Aug 2018, *2018 European Conference on Networks and Communications, EuCNC 2018*. Institute of Electrical and Electronics Engineers (IEEE), p. 319-323 5 p. 8442635. (2018 European Conference on Networks and Communications, EuCNC 2018).

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Xylomenos, G., Phinikarides, A., Doumanis, I., Vasilakos, X., Thomas, Y., Trossen, D., Georgiades, M. & Porter, S., 12 Jun 2018, *Proceedings of the 23th ACM Workshop on Packet Video, PV 2018*. Association for Computing Machinery (ACM), p. 66-71 6 p. (Proceedings of the 23th ACM Workshop on Packet Video, PV 2018).

Demo: Plug & play network application chaining for multi-service programmability in 5G RAN

Nikaein, N., Chang, C. Y., Schmidt, R., Shariat, S., Alexandris, K. & Vasilakos, X., 10 Jun 2018, *MobiSys 2018 - Proceedings of the 16th ACM International Conference on Mobile Systems, Applications, and Services*. Association for Computing Machinery (ACM), 1 p. (MobiSys 2018 - Proceedings of the 16th ACM International Conference on Mobile Systems, Applications, and Services).

Mobility-based proactive multicast for seamless mobility support in cellular network environments

Vasilakos, X., Al-Khalidi, M., Siris, V. A., Reed, M. J., Thomos, N. & Polyzos, G. C., 9 Aug 2017, *MECOMM 2017 - Proceedings of the 2017 Workshop on Mobile Edge Communications, Part of SIGCOMM 2017*. Association for Computing Machinery (ACM), p. 25-30 6 p. (MECOMM 2017 - Proceedings of the 2017 Workshop on Mobile Edge Communications, Part of SIGCOMM 2017).

Addressing niche demand based on joint mobility prediction and content popularity caching

Vasilakos, X., Siris, V. A. & Polyzos, G. C., 9 Dec 2016, In: *Computer Networks*. 110, p. 306-323 18 p.

Exploiting mobility prediction for mobility & popularity caching and DASH adaptation

Siris, V. A., Vasilakos, X. & Dimopoulos, D., 26 Jul 2016, *WoWMoM 2016 - 17th International Symposium on a World of Wireless, Mobile and Multimedia Networks*. Institute of Electrical and Electronics Engineers (IEEE), 7523523. (WoWMoM 2016 - 17th International Symposium on a World of Wireless, Mobile and Multimedia Networks).

On the inter-domain scalability of route-by-name Information-Centric Network Architectures

Katsaros, K. V., Vasilakos, X., Okwii, T., Xylomenos, G., Pavlou, G. & Polyzos, G. C., 30 Jun 2015, *Proceedings of 2015 14th IFIP Networking Conference, IFIP Networking 2015*. Mammeri, Z. & Kacimi, R. (eds.). Institute of Electrical and Electronics Engineers (IEEE), 7145308. (Proceedings of 2015 14th IFIP Networking Conference, IFIP Networking 2015).

Adapting data popularity in mobility-based proactive caching decisions for heterogeneous wireless networks

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A Survey of information-centric networking research

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On inter-domain name resolution for information-centric networks

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Supporting mobility in a publish subscribe internetwork architecture

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