

# Curriculum Vitae

## Thi Mai Trang NGUYEN

Full Professor

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### Academic and employment history

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Since 09/2022	Full Professor in Computer Engineering Sorbonne Paris North University (Université Sorbonne Paris Nord - USPN) – Galileo Institute (Institut Galilée) – Data Processing and Transmission Lab (Laboratoire de Traitement et Transport de l'Information - L2TI)
2006 - 2022	Associate Professor in Computer Science Sorbonne Université – Laboratoire d'Informatique de Paris 6 (LIP6)
2005 - 2006	Postdoctoral researcher University of Lausanne, Switzerland
2004	Postdoctoral researcher France Télécom, Cesson-Sévigné, France

### Educational and academic qualifications

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2013-2022	French qualification for functions of Full Professor in Computer Science
2012	Habilitation for research direction in Engineering Sciences Sorbonne Université, France
2000 – 2003	PhD in Computer Science University of Paris 6 (Sorbonne Université) & Télécom-Paris, France
1999 - 2000	MSc in Computer Science University of Versailles, France
1994 - 1999	BSc in Electrical Engineering Ho Chi Minh City University of Technology, Vietnam

## Honors, Prizes and Awards

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Second prize of Student Research Competition, graduate category, for the Demo paper "Blockgraph proof-of-concept" at ACM SIGCOMM 2021 (rank A+ conference – CORE ranking, one of the best international conferences in networking).

Honorable Mention Award (attributed to 5% best papers) for the paper «Dynamic Cluster-Based Over-Demand Prediction in Bike Sharing Systems” at the ACM International Joint Conference on Pervasive and Ubiquitous Computing (UbiComp), 2016 (rank A+ conference – CORE ranking).

Recherche Investment Recognition of Sorbonne Université (2010-2014 and 2018-2022), sabbatical grant of Sorbonne Université (2017).

First rank of the French program of AUF (Agence Universitaire de la Francophonie) in Electrical Engineering at HCMC University of Technology, Vietnam – Laureate of Master scholarship in France (1999).

## Research activities

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My research activities cover major aspects in telecommunications networks and computer networks such as quality of service, mobility management, network security, future Internet architecture and future generation of mobile wireless networks.

My PhD thesis (2000-2003) subject was about end-to-end Quality of Service for the Internet. I've actively participated in the IETF (Internet Engineering Task Force) activities with the proposition of an Internet-draft on the COPS-SLS protocol.

During my first postdoc at France Telecom, I've studied the vertical handover between Wi-Fi and General Packet Radio Service (GPRS). During my second postdoc at University of Lausanne, Switzerland, I've proposed an integration of the quantum key distribution into Wi-Fi networks.

During 2006-2014, my research focused on the future Internet with the contributions on network architecture based on virtualization, network function composition, multihoming, cognitive radio and network coding. In 2014-2019, my research was related to Software-defined networking (SDN), device-to-device communications (D2D) and mobile data analytics. Since 2019, my research direction has been towards the 5G mobile networks, blockchain and cloud continuum.

I have supervised 9 graduated PhD thesis, 4 ongoing PhD thesis and 15 Master 2 internships.

## Research projects

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- Principle Investigator (PI) of LIP6 in the European **FP7 4WARD** (2008-2010) on Future Internet (37 partners, 16 countries)
- **ANR 3MING** (2008-2011) project on multihoming (6 partners)
- Coordinator of LIP6 projects: **LIP6-CRN** on cognitive radio (2010- 2011), **LIP6-ORDODE** on network coding (2014), **LIP6-D2D** on Device-to-Device communications (2016-2017) and **LIP6-DSYNC** on temporal synchronization in cognitive radio networks (2019).
- Participant in the **FP7 Mobile Cloud** project working on Cloud Computing (2013-2016)
- Participant in the **CNRS FAPEMIG WINDS** project (2015) working in Cloud Computing and in the **COFECUB/CAPES CROMO** project (2016) working Cloud Computing.
- Coordinator of the **PHC Carlos Finlay DIRAC** project working on rendez-vous protocols in cognitive radio networks (2019-2020)

- Principle Investigator of LIP6 in the **DGA B4MESH** project working on Blockchain in mesh networks (2019-2021)
- Scientific leader of LIP6 in the BPI/Ile-de-France **SECPB** project working on Blockchain for secure inter-cloud virtual machine migration (2020-2021).
- Scientific leader of LIP6 in the AMI Télécom 5G **ENE5AI** project which uses hybrid 5G-WiFi networks for intelligent edge services (2022-2023)
- Coordinator of the RSFI **5G-REISEP** project for a shared 5G experimental platform (2022-2024).

## Conference organization and editorial services

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- **Publicity co-chair** of the 5<sup>th</sup> International Conference on Cyber Security in Networking (CSNet) 2021, and 1<sup>st</sup> International Conference on 6G Networking (6GNet) 2022.
- **Publication co-chair, editor** of the Proceedings of IFIP Wireless and Mobile Networking Conference (WMNC) in 2019, 2021 et 2022.
- **Workshop Co-chairs** of the IEEE Workshop on Multi-homing and Mobility for the Future Internet (MMFI), 2011.
- **Track Co-chair** of Networks Track of the IEEE International Conference on Advanced Technologies for Communications (ATC) in 2012 et 2015, IEEE International Conference on Communications and Electronics (ICCE) 2022.
- **Technical Program Committee member** of IEEE and IFIP conferences: ICC (since 2012), WCNC (since 2014), Globecom (since 2015), Network of the Future (NoF) (since 2010), INFOCOM Workshop IECCO (2017), IWCMC (2017), GIIS (2015), 5G World Forum (2018)
- **Reviewer of international journals:** IEEE Communications Magazine (since 2011), IEEE Network Magazine (2004), IEEE Communications Letters (since 2018), IEEE Access (2020), Springer Annals of Telecommunications (since 2010), Springer Telecommunication Systems (2012-2013), Springer Wireless Networks (2018), Elsevier Ad Hoc Networks (2015), Elsevier Pervasive and Mobile Computing (since 2018), Elsevier Computer Networks (2019), Elsevier Computer Communications (2020).
- **Associate editor** of the REV Journal on Electronics and Communications
- Head of the “Mobile and wireless networks” subject, **SCIENCES collection** in Network and Communications, ISTE group.

## Research visits

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- Federal University of Minas Giras (UFMG), Brazil, (2 weeks, 2015)
- Federal University of Rio de Janeiro (UFRJ), Brazil (2 weeks, 2016)
- Laboratory of Information, Networking and Communication Sciences (LINCS), Paris, France (2 months, 2017)
- George Mason University (GMU), Washington DC, USA (3 months, 2017)
- Universidad Central "Marta Abreu" de Las Villas, Santa Clara, Cuba (1 week, 2019)
- Northwestern Polytechnical University, Xian, Chine (1 week, 2019)
- Xiamen University, Xiamen, Chine (1 week, 2019)

## Selected publication list

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### *International journals*

- [J1] D. Cordova, P. B. Velloso, A. Laubé, T.M.T. Nguyen and G. Pujolle, “A performance evaluation of C4M consensus Algorithm”, Annals of Telecommunications, Springer, November 2022.

- [J2] E. O. Guerra, V. A. Reguera, C. Duran-Faundez and T.M.T. Nguyen, "Channel hopping for blind rendezvous in cognitive radio networks: A review", *Computer Communications*, Elsevier, August 2022.
- [J3] S. Khabaz, T.M.T. Nguyen, G. Pujolle and P. Velloso, "Resource Allocation Modes in C-V2X: From LTE-V2X to 5G-V2X", *IEEE Internet of Things Journal*, Vol. 9, Issue 11, pp. 8291-8314, June 2022.
- [J4] L. Chen, Z. Jiang, D. Yang, Ch. Wang and T.M.T. Nguyen, "Fog radio access network optimization for 5G leveraging user mobility and traffic data", *Journal of Network and Computer Applications (JNCA)*, Elsevier, Vol. 191, October 2021.
- [J5] K. Ouali, M. Kassar, T.M.T. Nguyen, K. Sethom and B. Kervella, "Performance Evaluation of an Effective Mobility Model for D2D Communications", *Wireless Personal Communications*, Springer Verlag, November 2020.
- [J6] L. Chen, T.M.T. Nguyen, D. Yang, M. Nogueira, C. Wang and D. Zhang, "Data-Driven C-RAN Optimization Exploiting Traffic and Mobility Dynamics of Mobile Users", *IEEE Transactions on Mobile Computing*, February 2020.
- [J7] L. Chen, Y. Dingqi, D. Zhang, C. Wang, J. Li, and T.M.T. Nguyen, "Deep Mobile Traffic Forecast and Complementary Base Station Clustering for Cloud-RAN Optimization", *Journal of Network and Computer Applications*, Elsevier, Vol. 121, pp. 59-69, November 2018.
- [J8] T.M.T. Nguyen, L. Hamidouche, F. Mathieu, S. Monnet and S. Iskounen, "SDN-based Wi-Fi Direct Clustering for Cloud Access in Campus Networks", *Annals of Telecommunications*, Springer, 2018, 73 (3), pp.239--249.
- [J9] S. Secci, G. Pujolle, T.M.T. Nguyen and S.C. Nguyen, "Performance-Cost Trade-off Strategic Evaluation of Multipath TCP Communications", *IEEE Transactions on Network and Service Management*, Volume 11, Issue 2, pp. 250-263, June 2014.
- [J10] T.M.T. Nguyen, N. Boukhatem, "Service level negotiation and COPS-SLS protocol", *Annals of Telecommunications*, January 2004.
- [J11] T.M.T. Nguyen, N. Boukhatem, G. Pujolle, "COPS-SLS Usage for Dynamic Policy-based QoS Management over Heterogeneous IP Networks", *IEEE Network*, May/June 2003.
- [J12] T.M.T. Nguyen, N. Boukhatem, Y.G. Doudane, G. Pujolle, "COPS-SLS: A service level negotiation protocol for the Internet", *IEEE Communications*, May 2002.

#### *International conferences*

- [C1] P. B. Velloso, D. Cordova, T. M. T. Nguyen and G. Pujolle, "BASICS: A Multi-Blockchain Approach for Securing VM Migration in Joint-Cloud Systems", *IEEE Consumer Communications & Networking Conference (CCNC)*, Las Vegas, USA, January 2023.
- [C2] S. Khabaz, K. Ouali, T.M.T. Nguyen, G. Pujolle, M. El Aoun and P. Velloso, "A New Priority and Satisfaction-based Resource Allocation Algorithm with Mixed Numerology for 5G-V2X communications", *14th IFIP Wireless and Mobile Networking Conference (WMNC)*, Sousse, Tunisia, October 2022.
- [C3] D. Cordova, P. Velloso, A. Guerre, T.M.T. Nguyen, G. Pujolle, K. Al Agha and G. Dua, "Blockgraph proof-of-concept", Demo paper, *ACM Special Interest Group on Data Communication (SIGCOMM) Conference*, August 2021.
- [C4] K. Ouali, M. Kassar, T.M.T. Nguyen, K. Sethom and B. Kervella, "An efficient D2D Handover Management Scheme for SDN-based 5G Networks", *IEEE Consumer Communications and Networking Conference (CCNC)*, Las Vegas, USA, January 2020.

- [C5] E. Ortiz, J. Perez, V. A. Reguera, T.M.T. Nguyen and G. Pujolle, " A Novel Multi-Radio Rendezvous Scheme for Cognitive Radio Networks", 12th IFIP Wireless and Mobile Networking Conference (WMNC), Paris, France, September 2019.
- [C6] T. A. Nguyen, P. Martins, V. T. Nguyen, T. M. T. Nguyen, "A new analytical model for the performance evaluation of the uplink transmission in NB-IoT networks", IEEE 88th Vehicular Technology Conference (VTC), August 2018, Chicago, USA.
- [C7] A. Azzouni, R. Boutaba, T.M.T. Nguyen and G. Pujolle, "sOFTDP: Secure and Efficient OpenFlow Topology Discovery Protocol", IEEE/IFIP Network Operations and Management Symposium (NOMS), Tapei, Taiwan, April 2018.
- [C8] H. Baccouch, P.L. Ageneau, N. Tizon, N. Boukhatem and T.M.T. Nguyen, "Bounded Network Coding Redundancy for Multi-Layer Video Streaming", ACM 13th International Wireless Communications and Mobile Computing Conference (IWCMC), Valencia, Spain, June 2017.
- [C9] W. Souza da Silva, D. F. Marcedo, M. Nogueira, T.M.T. Nguyen and J.M. Nogueira, "A Multilayer Link Quality Estimator for Reliable Machine-to-Machine Communication", IEEE 28th Annual International Symposium on Personal, Indoor, and Mobile Radio Communications (PIMRC), Montréal, Québec, Canada, October 2017.
- [C10] A. Azzouni, O. Braham, T.M.T. Nguyen, G. Pujolle and R. Boutaba, « Fingerprinting OpenFlow controllers: The first step to attack an SDN control plane », IEEE Global Communications Conference (Globecom), Washington, USA, December 2016.
- [C11] S. C. Nguyen, T.M.T. Nguyen, G. Pujolle and S. Secci, « Strategic Evaluation of Performance-Cost Trade-offs in a Multipath TCP Multihoming Context », IEEE International Conference on Communications (ICC), Ottawa, Canada, June 2012.