

KHOA NGUYEN, Ph.D.

Carleton University

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EDUCATION

Ph.D. in Electrical and Computer Engineering 2015 - 2021

- Department of Systems and Computer Engineering, Carleton University, Canada.
Dissertation: *Distributed and Parallel Metaheuristic-based Algorithms for Online Virtual Resource Allocation*. Supervisor: *Professor Changcheng Huang*.

M.Sc. in Telecommunications Engineering 2012 - 2013

- Faculty of Computer Science, University of Sunderland, UK.

B.Eng. Degree in Electronics and Telecommunication 2003 - 2008

- College of Engineering Technology, Can Tho University, Vietnam.

PROFESSIONAL EXPERIENCE

Postdoctoral Fellow 01 Mar, 2022 – 28 Feb, 2023

- School of Information Technology, Carleton University, Ottawa, Canada.
Supervisor: *Professor Wei Shi and Professor Marc St-Hilaire (co-supervisor)*.

Research Associate Dec, 2021 – Feb, 2022

- Department of Systems and Computer Engineering, Carleton University, Ottawa, Canada.
Supervisor: *Professor Changcheng Huang*.

Research Intern Jan, 2020 – Mar, 2021

- BitQubic Corp., Ottawa, Canada.

Lecturer Sept, 2013 – Sept, 2015

- Can Tho University of Technology, Can Tho City, Viet Nam.

Telecommunication Engineer Mar, 2009 – Nov, 2010

- Viettel Telecom Company, Can Tho City, Viet Nam.

Network Engineer Jun, 2008 – Mar, 2009

- Vietnam mobile services company (VMS-Mobifone) - Zone 3, Can Tho City, Vietnam.

PROFESSIONAL ACTIVITIES

Journals - Reviewer:

- Springer Nature Artificial Intelligence Review Journal
- IEEE Internet of Things Journal
- IEEE Transaction on Network and Service Management
- IEEE Access
- Hindawi Journal of Sensors
- Journal of Networking and Network Applications

- Journal of Service Science and Management
- International Journal of Communication Systems
- MDPI Electronics Journal, Mathematics Journal, and Sustainability Journal

Conferences - Reviewer:

- IEEE Global Communications Conference (GLOBECOM)
- IEEE Vehicular Technology Conference (VTC)
- IEEE Vehicular Power and Propulsion (VPP)
- IEEE/ACM Conference on Connected Health Applications, Systems, and Engineering Technologies (CHASE)
- IEEE Wireless Communications and Networking Conference (WCNC)
- International Conference on Computer Science and Application Engineering (CSAE) published in ACM
- International Conference on Pattern Recognition, Machine Vision and Intelligent Algorithms (PRMVIA).

TPC Member:

- International Conference on Advances in Human-oriented and Personalized Mechanisms, Technologies, and Services (CENTRIC) 2022.
- International Symposium on Intelligent Technology for Future Transportation (ITFT) 2024.

Workshop Chair:

International Conference on Pattern Recognition, Machine Vision and Intelligent Algorithms (PRMVIA) 2022.

Topic: *Evolutionary Computation for Intelligent Communication Networks in Smart Cities.*

SCHOLARSHIPS, AWARDS AND ACHIEVEMENTS

Grants:

- Research Intern at BitQubic funded by NSERC conducting a research on extensible and reliable edge computing infrastructure. **Jan, 2020 – Mar, 2021**
- Awarded student Travel Grant from IEEE International Conference on Communications (ICC2021). **2021**
- Awarded student Travel Grant from IEEE Global Communications Conference (Globecom2021). **2021**

Teaching Assistant - Carleton University:

- SYSC5801: Advanced Topic in Computer Communications,
- SYSC5001: Discrete Simulation/Modelling (LEC),
- SYSC2310: Introduction to Digital Systems,
- SYSC2004: Object-Oriented Software Development (LEC),
- ECOR1606: Problem Solving and Computers.

Certificates:

- Neural Networks and Deep Learning - Coursera Certificate **2019**
- Certificate of Mobile Technologies and Services Training Program, Centre for
- Excellence in Telecom Technology & Management Mumbai **2014**

LIST OF PUBLICATIONS

Journals:

1. **K. Nguyen** and C. Huang, "Toward Adaptive Joint Node and Link Mapping Algorithms for Embedding Virtual Networks: A Conciliation Strategy," in *IEEE Transactions on Network and Service Management*, vol. 19, no. 3, pp. 3323-3340, Sept. 2022, doi: 10.1109/TNSM.2022.3159479.
2. **K. Nguyen**, S. Drew, C. Huang and J. Zhou, "Parked Vehicles Task Offloading in Edge Computing," in *IEEE Access*, vol. 10, pp. 41592-41606, 2022, doi: 10.1109/ACCESS.2022.3167641.
3. **K. Nguyen** and C. Huang, "Distributed parallel genetic algorithm for online virtual network embedding," *Wiley International Journal of Communication Systems*, 23 Dec 2020, pp. e4691, doi: 10.1002/dac.4691.
4. Q. Lu, **K. Nguyen** and C. Huang, "GAONE: A Novel Approach for Online One-stage Virtual Functions Embedding", *Journal of Networking and Network Applications*, 2021 (to appear).
5. Q. Lu, **K. Nguyen** and C. Huang, Distributed parallel algorithms for online virtual network embedding applications. *Wiley International Journal of Communication Systems*, 24 Jan 2020, pp. e4325, doi: 10.1002/dac.4325.

Conferences:

1. **K. Nguyen**, W. Shi and M. St-Hilaire, "Online Resource Allocation in Internet of Vehicles Using Topology Attribute-Aware Genetic Algorithm," *2023 IEEE 11th International Conference on Information, Communication and Networks (ICICN)*, Xi'an, Shaanxi, China, 2023 (accepted).
2. **Nguyen, K.**, Shi, W., St-Hilaire, M. (2023). Cost-Aware Node Ranking Algorithm for Embedding Virtual Networks in Internet of Vehicles. In: Kambayashi, Y., Nguyen, N.T., Chen, SH., Dini, P., Takimoto, M. (eds) *Artificial Intelligence for Communications and Networks. AICON 2022. Lecture Notes of the Institute for Computer Sciences, Social Informatics and Telecommunications Engineering*, vol 477. Springer, Cham. https://doi.org/10.1007/978-3-031-29126-5_1.
3. **K. Nguyen**, W. Shi and M. St-Hilaire, "A Dynamic Vehicle-Ranking Approach for Online Virtual Network Embedding in Internet of Vehicles," *2022 32nd International Telecommunication Networks and Applications Conference (ITNAC)*, Wellington, New Zealand, 2022, pp. 287-292, doi: 10.1109/ITNAC55475.2022.9998424.
4. **K. Nguyen**, S. Drew, C. Huang and J. Zhou, "EdgePV: Collaborative Edge Computing Framework for Task Offloading," *ICC 2021 - IEEE International Conference on Communications*, 2021, pp. 1-6, doi: 10.1109/ICC42927.2021.9500400.
5. **K. Nguyen**, Q. Lu and C. Huang, "Joint Node-Link Algorithm for Embedding Virtual Networks with Conciliation Strategy," *2021 IEEE Global Communications Conference (GLOBECOM)*, 2021, pp. 1-6, doi: 10.1109/GLOBECOM46510.2021.9685037.

6. **K. Nguyen**, Q. Lu and C. Huang, "Joint Node-Link Embedding Algorithm based on Genetic Algorithm in Virtualization Environment," *2021 IEEE 94th Vehicular Technology Conference (VTC2021-Fall)*, 2021, pp. 1-5, doi: 10.1109/VTC2021-Fall52928.2021.9625390.
7. **K. Nguyen**, S. Drew, C. Huang and J. Zhou, "Collaborative Container-based Parked Vehicle Edge Computing Framework for Online Task Offloading," *2020 IEEE 9th International Conference on Cloud Networking (CloudNet)*, 2020, pp. 1-6, doi: 10.1109/CloudNet51028.2020.9335809.
8. **K. Nguyen**, Q. Lu and C. Huang, "Efficient Virtual Network Embedding with Node Ranking and Intelligent Link Mapping," *2020 IEEE 9th International Conference on Cloud Networking (CloudNet)*, 2020, pp. 1-5, doi: 10.1109/CloudNet51028.2020.9335801.
9. **K. Nguyen**, Q. Lu and C. Huang, "Rethinking Virtual Link Mapping in Network Virtualization," *2020 IEEE 92nd Vehicular Technology Conference (VTC2020-Fall)*, 2020, pp. 1-5, doi: 10.1109/VTC2020-Fall49728.2020.9348799.
10. **K. Nguyen** and C. Huang, "An Intelligent Parallel Algorithm for Online Virtual Network Embedding," *2019 International Conference on Computer, Information and Telecommunication Systems (CITS)*, Beijing, China, Aug. 2019, pp. 1-5, doi: 10.1109/CITS.2019.8862072.
11. Q. Lu, **K. Nguyen** and C. Huang, "A Novel One-stage Distributed Parallel Embedding for Virtualized Network Environment," *2020 IEEE International Conference on Systems, Man, and Cybernetics (SMC)*, Toronto, ON, Oct. 2020, pp. 395-400, doi: 10.1109/SMC42975.2020.9282829.