

Curriculum Vitae

PERSONAL DATA

Truong Khoa Phan – 3rd year PhD candidate.

Project COATI, INRIA Sophia Antipolis - I3S (CNRS, UNS).
2004, route des Lucioles, 06902, Sophia Antipolis – France.

Date of birth: January 02, 1984

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EDUCATION

PhD, project COATI, I3S - INRIA Sophia Antipolis, France *Oct 2011 – Sept 2014*

- Thesis: “Design and Management of Green Networks with Low Power Consumption”.
- Advisor: Prof. Joanna Moulierac and Dr. David Coudert

Master of Science, INRIA – I3S (UNS- CNRS), France *2010 – 2011*

- Thesis: “Minimization of Network Power Consumption with WAN Optimization”
- Advisor: Prof. Joanna Moulierac
- Rank: 3/18

Bachelor of Engineering, HCMC University of Technology, Vietnam. *2002 – 2007*

- Thesis: “MaxNet TCP Congestion Control”
- Advisor: Prof. Nam Thoai
- Rank: 1/250

SCHOLARSHIPS AND AWARDS

- **French Minister Fellowship (MERS)** for 3 years PhD, France, 2011 – 2014.
- **Full scholarship for Master 2 Ubinet**, INRIA – I3S (UNS – CNRS), France, 2010 – 2011.
- **University Merit** for bachelor student at the top of the graduation list, HCMUT, Vietnam, 2002 – 2007.

PREVIOUS POSITIONS AND MOBILITY

Visiting PhD student, RWTH Aachen University, Germany *Oct – Dec 2012*

- Worked on Green Network Optimization and Robust Network Design.
- Supervisor: Professor Arie M. C. A. Koster.

Assistant Lecturer, Faculty of Computer Science and Engineering, HCMC University of Technology, Vietnam. *2007 – 2010*

- Lectured courses in Computer Network, Parallel Processing and Distributed System.
- Carried out research in the fields of Multicast – P2P network and TCP Congestion Control.

PROFESSIONAL ACTIVITIES

- **Reviewer:** IEEE ICC 2013, IEEE GlobeCom 2013, ONDM 2013, IEEE GlobeCom 2012 and SEA 2012.
- **Supervision of bachelor theses:** 5 works (in Vietnam).
- **Instruction of Master internship and project:** 2 works (in France).

RESEARCH EXPERIENCE

My research interests are in computer networking and distributed systems with emphasis on network optimization and multicast – P2P network.

2011 – present: **Design and Management of Green Network with Low Power Consumption**

- **Team:** Mascotte (INRIA/I3S), Orange Lab, Aachen University.
- **Project:** ANR DIMAGREEN, financed by the French national research agency (ANR Young Researchers).
- In this work, we developed solutions to aggregate network traffic in cooperation with redundancy elimination technique. This helps to improve energy efficiency of backbone networks without compromising performance. In particular, we have applied optimization methods, e.g. linear program and greedy heuristics, in formulating and efficiently solving the problems. Moreover, we also worked on robust network optimization in which traffic volumes and redundant rates are uncertain. The results have been applied for a vast range of routing models such as Multiprotocol Label Switching (MPLS), Open Shortest Path First (OSPF) and Software Defined Networks (SDN).

2007 – 2010: **Application Layer Multicast with Fast Routing Convergence**

- **Team:** Immersive Communication Task Force Panasonic Corporation (Japan), Panasonic Kuala Lumpur Laboratory (Malaysia), Network Team Panasonic Singapore Lab (Singapore) and HCMC University of Technology (Vietnam).
- **Project:** ALM FRC, funded by Panasonic.
- We proposed a multicast model to adapt QoS requirements for small group application such as video conferencing. In particular, we introduce Xcast6 Treemap, an extension of Xcast6 – RFC 5058, which is easy to be deployed and run efficiently in the Internet. The result of this work is Xcast6 Treemap source code in Linux/FreeBSD kernels.

2007 – 2008: **MaxNet and TCP Reno/RED on Mice Traffic**

- **Team:** HCMC University of Technology, HCMC University of Natural Sciences, Vietnam.
- In this work, we theoretically proved the benefits of MaxNet TCP in controlling queue length at routers. We then setup a small testbed with Linux end-hosts installed MaxNet and Dummynet routers to show the findings.

PUBLICATIONS

Journals:

[1] D. Coudert, A. Kodjo and **T.K. Phan**, “*Robust Energy-aware Routing with Redundancy Elimination*”, submitted to Journal of Computers and Operations Research, 2014 (**in revision**).

A research report version: <http://hal.inria.fr/hal-00936745>

[2] J. Moulierac and **T.K. Phan**, “*Optimizing IGP Link Weights for Energy-efficiency in a Changing World*”, submitted to Computer Communications, 2014.

A research report version: <http://hal.inria.fr/hal-00988882>

[3] F. Giroire, J. Moulierac, **T.K. Phan** and F. Roudaut. “*Minimization of Network Power Consumption with Redundancy Elimination*”, submitted to Computer Communications, 2014 (**in revision**).

Conferences and Workshops:

[1] F. Giroire, J. Moulierac and **T.K. Phan**, “*Optimizing Rule Placement in Software-Defined Networks for Energy-aware Routing*”, submitted to IEEE GlobeCom, 2014.

A research report version: <http://hal.inria.fr/hal-00990038>

[2] D. Coudert, A. Kodjo and **T.K. Phan**, “*Robust Optimization for Energy-aware Routing with Redundancy Elimination*”, in Algotel 2014 (accepted).

[3] D. Coudert, A. M. C. A. Koster, **T. K. Phan** and M. Tieves, “*Robust Redundancy Elimination for Energy-aware Routing*”, in IEEE GreenCom, Beijing, China, August 2013, IEEE.

[4] A. Koster, T.K. Phan and M. Tieves. “*Extended Cutset Inequalities for the Network Power Consumption Problem*”, in International Network Optimization Conference (INOC), Tenerife, Spain, Electronic Notes in Discrete Mathematics, May 2013, Springer.

[5] **T.K. Phan**, J. Moulierac, N.C. Tran and N. Thoai. “*Xcast6 Treemap Islands – Revisiting Multicast Model*”, in ACM CoNEXT Student Workshop, Nice, France, December 2012. ACM.

A research report version: <http://hal.inria.fr/inria-00637656>

[6] F. Giroire, J. Moulierac, **T.K. Phan** and F. Roudaut. “*Minimization of Network Power Consumption with Redundancy Elimination*”, in IFIP TC6 Networking Conference, Prague, Czech Republic, Lecture Notes in Computer Sciences, May 2012.

[7] **K.T. Phan**, T.T. Tran, D.D. Nguyen and N. Thoai. “*MaxNet and TCP Reno/RED on Mice Traffic*”, in 4th International Conference on High Performance Scientific Computing, Hanoi, Vietnam, 2009. *An extended version in “Modeling, Simulation and Optimization of Complex Processes”, Springer 2012.*

[8] **K.T. Phan**, N. Thoai, E. Muramoto, K.K. Ettikan, B.P. Lim and P.Y. Tan. “*Treemap – the Fast Routing Convergence Method for Application Layer Multicast*”, in 7th IEEE Consumer Communication and Networking Conference (CCNC), Nevada, USA, 2010.

[9] B.P. Lim, K.K. Ettikan, E.S. Lin, T.K. Phan, N. Thoai, E. Muramoto and P.Y. Tan. “*Bandwidth Fair Application Layer Multicast for Multi-party Video Conference Application*”, in 6th IEEE Consumer Communication and Networking Conference (CCNC), Nevada, USA, 2009.

Others:

T.K. Phan, N. Thoai, E. Muramoto and K.K. Ettikan. “*Xcast6 Treemap: An Extension of Xcast6*”. Internet Draft, 2009.

Note: Some papers have the list of authors in alphabet order. I’m the main contributor for the papers with my name in **bold text**.