Duc-Tuyen TA

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EDUCATION

Telecom ParisTech, Paris, France

- Ph.D. in Electrical Engineering — Nov 2014 – Apr 2018
  - Thesis: Channel Surveillance Strategy and Interference Reduction in Future Wireless Networks
  - Adviser: Assoc. Prof. Van-Tam Nguyen
  - Focus: Game Theory, Resource Allocation, Dynamic Spectrum Access, Security.

University of Engineering, Vietnam National University Hanoi, Vietnam

- M.S. in Electrical Engineering — Sep 2008 – Aug 2010
  - Cumulative GPA: 3.54 / 4.0
- B.S. in Electrical Engineering — Sep 2004 – Jun 2005
  - Graduated with College Honors.
  - Cumulative GPA: 8.4 / 10

RESEARCH EXPERIENCE

Telecom ParisTech, Paris, France

- PhD Student — Feb 2017 – Oct 2017
  - **Project**: *Collaborative resource allocation framework for intelligent radio networks*, in collaboration with Assistant Professor Duy H. N. Nguyen, Department of Electrical and Computer Engineering, San Diego State University, USA.
  - **Supervisors**: Prof. Van-Tam Nguyen
  - **Focus**: *Game Theory, Collaborative, intelligent radio networks*.
  - **Goal**: A collaborative resource allocation framework that ensuring the coexistence between independent network or users which share common frequency bands. The proposed collaborative power allocation possesses the advantages of the optimality and distributed implementation. Simulation results show significant performance improvements in terms of power fairness, achievable sum-rate and convergence time in comparison with the conventional approaches.
- PhD Student — Feb 2017 – Oct 2014
  - **Project**: *Game theory for surveillance process to mitigate the influence of misbehaving user in the Dynamic Spectrum Access (DSA) communication systems*.
  - **Supervisors**: Prof. Van-Tam Nguyen
  - **Focus**: *Game Theory, Primary User Emulation Attack, Spoofing Attack, Congestive Radio Network*.
  - **Goal**: The mitigation methods to deal with the influence of the misbehaving users, such as the selfish or the malicious, in the centralized-based DSA communication system, e.g., Cognitive Radio networks. The relationship between the network coordinator and the misbehaving user is formulated as a non-cooperative game.

VNU University of Engineering and Technology, Vietnam

- Co-Principal Investigators — Feb 2014 – Feb 2015
  - **Project**: *Monitoring and early warning of landslides in Vietnam*, supported by ISIF Asia.
  - **PI**: Prof. Duc-Tan Tran
  - **Focus**: *Landslide, Sensor Network, Surveillance*.
  - **Goal**: Designing and implementing an efficient and reliable Landslide Monitoring and Early Warning (LMnE) system based on the 3G/2G mobile communication system combining with a wireless sensor network at monitoring stations.

National Institute of Informatics (NII), Tokyo, Japan

- Internship — Feb 2014 – Aug 2014
  - **Project**:
  - **Supervisors**: Prof. Nobutaka Ono (now with Tokyo Metropolitan University, Japan)
  - **Focus**: *Source Separation, Acoustic Processing, Principal Component Analysis*.
  - **Goal**: A redundant reduction framework for reducing the size of the multiplexing data receiving at the multiple microphone systems. The work aims to apply in the voice-controlled TV with multiple microphones.

VNU University of Engineering and Technology, Vietnam

- Research Assistant, Electronics and Telecommunication Department — Jan 2012 – Jan 2014
  - **Project**: *Cross-layer cooperative communications for future wireless networks based on network coding*, supported by Ministry of Science and Technology-Vietnam.
  - **Supervisors**: Prof. Nguyen Linh-trung
  - **Focus**: *Network Coding, Software Defined Radio, Network Error Correction*.
  - **Goal**: The model of a network coding-based cooperative communication systems. A testbed with 6 communication nodes for the different types of network codes is implemented with USRP platform.

Bac Ha International University, Vietnam

- Researcher — Jan 2011 – Jan 2012
  - **Project**: *Efficient and reliable GPS wireless Ad Hoc sensor networks for marine monitoring, searching, and rescuing applications*, supported by the ISIF Asia.
  - **Supervisors**: Prof. Huynh Huu Tue
  - **Focus**: *Wireless Sensor Network, Medium Access Control, Latency*.
  - **Goal**: A novel MAC protocol for the sensor networks for marine monitoring, searching, and rescuing applications. A testbed with multiple communication nodes, which is contained a GPS, sensors, and radio communication devices, is implemented.

SELECTED PUBLICATIONS

JOURNALS

[4] Duc-Tuyen. Ta, Nhan Nguyen-Thanh, Patrick Maillé, and Van-Tam Nguyen, "Strategic Surveillance Against Primary User Emulation Attacks in Cognitive Radio Networks," *IEEE Transactions on Cognitive Communications and Networking, minor revision*.

[3] Duc-Tuyen. Ta, and Duy H.N. Nguyen, and Nhan Nguyen-Thanh, and Van-Tam Nguyen, "Collaborative Paradigm for Next Generation Wireless Networks," *EURASIP Journal on Wireless Communications and Networking, second round of peer review*.

[2] Nhan Nguyen-Thanh, and Duc-Tuyen. Ta, and Van-Tam Nguyen, "Spoofing Attack and Surveillance Game in Geo-location Database Driven Spectrum Sharing," *IET Communications , under consideration*.

[1] Duc-Tuyen. Ta, Tran Duc-Tan, Do Duc Dung, "Efficient and Reliable GPS-Based Wireless Ad Hoc for Marine Search Rescue System," *Multimedia and Ubiquitous Engineering , Lecture Notes in Electrical Engineering*, vol. 240, pp. 911–918, May 2013.

CONFERENCES

[6] Nhan Nguyen-Thanh, Han Le-Duc, Duc-Tuyen. TA, Van-Tam Nguyen, "Energy-efficient techniques using FFT for deep convolutional neural networks," in *Proceedings of the International Conference on Advanced Technologies for Communications (ATC)*, Hanoi, Vietnam, Oct 2016.

[5] Duc-Tuyen. TA, Nhan Nguyen-Thanh, Patrick. Maille, Phillipe. Ciblat, Van-Tam Nguyen, "Mitigating Primary Emulation Attacks in Multi-Channel Cognitive Radio Networks: A Surveillance Game," in *Proceedings of the IEEE Global Communications Conference (GLOBECOM)*, Washington, DC, USA Dec 2016.

[4] Duc-Tuyen. TA, Nhan Nguyen-Thanh, Phillipe. Ciblat, Van-Tam Nguyen, "Extra sensing game for malicious primary user emulator attack in cognitive radio network," in *Proceedings of the European Conference on Networks and Communications (EuCNC)*, Paris, France Jun 2015.

[3] Duc-Tuyen. TA, Duc-Tan Tran, Do Duc Dung, Van Hoang Nguyen, Vu van Yem and Xuan Nam Tran, "GPS-Based Wireless Ad Hoc Network for Marine Monitoring, Search and Rescue (MSnR)," in *Proceedings of Second International Conference on Intelligent Systems, Modelling and Simulation*, Kuala Lumpur, Malaysia Jun 2011.

[2] Duc-Tuyen. TA, Duc-Tan Tran, Do Duc Dung, Van Hoang Nguyen, Vu van Yem and Xuan Nam Tran, "Wireless ad hoc network based on Global Positioning System for marine monitoring, searching and rescuing (MSnR)," in *Proceedings of Asia-Pacific Microwave Conference*, Melbourne, Australia Dec 2011.

[1] Duc-Tuyen. TA, Duc-Tan Tran, Do Duc Dung, Van Hoang Nguyen, Vu van Yem and Xuan Nam Tran, "Wireless ad hoc network based on Global Positioning System for marine monitoring, searching and rescuing (MSnR)," in *Proceedings of the 2011 Sixth IEEE International Symposium on Electronic Design, Test and Application*, Queenstown, New Zealand Jan 2011.

ACADEMIC SERVICES

Reviewer for IEEE Transactions on Communications, IEEE Transactions on Vehicular Technology, IEEE Transactions on Cognitive Communications and Networking, IEEE Communications Letters, IET Communications, EURASIP Journal on Wireless Communications and Networking,...
TPC for International Conference on Advanced Technologies for Communications 2017 (ATC' 2017), Quy Nhon, Viet Nam.

AWARDS

Travel award in 2015 European Conference on Networks and Communications (EuCNC' 2015).
Award of Toshiba Corp for excellent results in study and research, 2009.

Consolation prize of Scientific Research Contest for students at Ministry Of Education and Trainings, Viet Nam (2008).

LANGUAGES

- Vietnam: Native language.
- English: Fluent (speaking, reading, writing).
- France: basic (reading, speaking, writing).

SKILLS MATLAB, Mathematica, R, Python, C/C++, TensorFlow, GNU Radio, Open CV, Git.

INTERESTS Data analysis, Photography, Trekking, Running.

REFERENCES

- **Associate Professor Van-Tam Nguyen**
  Professor of Electrical Engineering
  Telecom ParisTech
  46 rue Barrault, 75013 Paris, France
  van-tam.nguyen@telecom-paristech.fr • +33 67 746-4586
- **Professor Patrick Maillé**
  Professor of Electrical Engineering
  Dépt. Systèmes Réseaux, Cybersécurité et Droit du numérique, IMT Alantique
  Région de Rennes, France
  patrick.maille@imt-atlantique.fr • +33 2 99 12 70 28