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SUMMARY OF QUALIFICATIONS

Successful teaching, research, and service in higher education complement experience in public schools, industry.

EDUCATION

Doctor of Philosophy in Electrical and Computer Engineering, December 2013
Purdue University, West Lafayette, Indiana, U.S.A.
Dissertation Title: Analysis and Optimization of Cooperative Wireless Networks.

Master of Science in Applied Mathematics, May 2013
Purdue University, West Lafayette, Indiana, U.S.A.
Emphasis: Probability and Stochastic Processes

Master of Engineering in Electrical Engineering, July 2005
Ho Chi Minh City University of Technology, Ho Chi Minh City, Vietnam
Emphasis: Electronics and Telecommunications
Thesis Title: Investigating of solutions for capacity improving of MC-CDMA systems.

Bachelor of Engineering in Electrical Engineering, January 2002
Ho Chi Minh City University of Technology, Ho Chi Minh City, Vietnam
Thesis Title: Noise reduction in satellite communication using Wavelet Transform combined with Neural Networks and implement the solution on TI DSP kit.

AREAS OF SPECIALIZATION

Cooperative Wireless Communications
Network Information Theory
Signal Processing in Communications
Global Optimization and Convex Optimization

TEACHING ASSIGNMENTS

Purdue University (Teaching Assistant)

- ECE255 Microelectronics – Design and Analysis (Spring 2012, Fall 2012, Spring 2013 and Fall 2013)

Ton Duc Thang University (Lecturer)

- Advanced Digital Signal Processing (graduate)
- Statistical Signal Processing (graduate)
- Wireless Networks (graduate)
- Advanced Topics in Digital Signal Processing (graduate)
- Information Theory and Error Control Coding (undergraduate)
- Electronic Circuit Design (undergraduate)
- Digital Signal Processing (undergraduate)
- Signals and Systems (undergraduate)
- Communication Systems (undergraduate)
- VLSI Systems (undergraduate)

- RF Circuit Design (undergraduate)
- Probability Theory (undergraduate)

Ton Duc Thang University (Lab instructor)

- Microprocessing Lab
- Analog Electronics Lab
- Communication Lab
- Digital Logic Design Lab
- Digital Signal Processing Lab

ACADEMIC POSITIONS

Vice Dean, Faculty of Electrical and Electronics Engineering
Ton Duc Thang University, Ho Chi Minh City, Vietnam, since 10/2014

Lecturer, Head of Electronics and Telecommunication Department
Faculty of Electrical and Electronics Engineering
Ton Duc Thang University, Ho Chi Minh City, Vietnam – 01/2014 – 04/2015 and since 08/2018

Graduate Teaching Assistant, Department of Electrical and Computer Engineering
Purdue University, West Lafayette, IN, 2012 to 2013
Assisted in teaching undergraduate courses in Electrical Engineering.

Graduate Research Assistant, Department of Electrical and Computer Engineering
Purdue University, West Lafayette, IN, 2010 to 2012
Conducted research in cooperative wireless communications and relay network capacity.

Lecturer, Faculty of Electrical and Electronics Engineering
Ton Duc Thang University, Ho Chi Minh City, Vietnam - 2002 to 2007
Taught undergraduate level courses in Electrical Engineering.

- Taught courses in analog and digital circuit design, communication systems, and signal processing techniques.
- Instructed undergraduate students to do experiment courses.
- Advised undergraduate students in conducting research projects.

INDUSTRY EXPERIENCE

ASIC/FPGA Design Engineer (part time)
Arrive Technologies Vietnam, Ho Chi Minh City, Vietnam, 2002 to 2003

Involved in the hardware design projects in the company to fulfill the requests from international chip design companies.

- Produce technical specification for the EC1 Framer inside the RED CHIP (an OC192/OC48/OC12/OC3/EC1 System-on-a-chip).
- Delivered the Verilog test bench code for testing the functions of RED CHIP.

Automation Engineer
Samsung Electronics in Vietnam, Ho Chi Minh City, Vietnam, 4/2002 – 6/2002

- Maintained and improved the TV/monitor production line.
- Studied Six-Sigma theory for optimizing the manufacturing processes.

PUBLICATIONS

Books

[B1] Duy V. H., Dao T. T., Zelinka I., Kim S. B. and **Phuong T. T.** (Editors), "AETA 2017 - Recent Advances in Electrical Engineering and Related Sciences: Theory and Application", *Lecture Notes in Electrical Engineering*, vol. 465, Springer International Publishing, 2017.

[B2] Pham L. H., Dang K. N., and **Tran P. T.**, "*MATLAB and Applications in Telecommunications,"* The Publisher of Vietnamese National University at Ho Chi Minh City, 04/2006 (in Vietnamese).

Journals

[J1] Ba Cao Nguyen, Tran Manh Hoang, **Phuong T. Tran**, Vinh P. Nguyen, Transmit antenna selection for spatial modulation MIMO IoT networks with full-duplex relaying, AEU - International Journal of Electronics and Communications, vol. 123, Article ID, 153312, 2020.

[J2] Ba Cao Nguyen, Tam Nguyen-Kieu, Tran Manh Hoang, **Phuong T. Tran**, Miroslav Vozňák, Analysis of MRT/MRC diversity techniques to enhance the detection performance for MIMO signals in full-duplex wireless relay networks with transceiver hardware impairment, *Physical Communication*, vol. 42, Article ID 101132, 2020.

[J3] Tan N. Nguyen, **Phuong T. Tran**, and Miroslav Voznak, ''Wireless energy harvesting meets receiver diversity: A successful approach for two-way half-duplex relay networks over block Rayleigh fading channel'', *Computer Networks*, vol. 172, Article ID 107176, 2020.

[J4] Hoang T. M., Nguyen B. C., **Tran P. T.,** and Dung L. T., ''Outage Analysis of RF Energy Harvesting Cooperative Communication Systems over Nakagami-m Fading Channels with Integer and Non-Integer m'', *IEEE Transactions on Vehicular Technology*, vol. 69, no. 3, pp. 2785-2801, 2020.

[J5] Nguyen B. C., Hoang T. M, and **Tran P. T.**, ''Improving the Performance of Spatial Modulation Full-Duplex Relaying System with Hardware Impairment Using Transmit Antenna Selection'', *IEEE Access*, vol. 8, no. 1, pp. 20191-20202, 2020.

[J6] Nguyen B. C., Hoang T. M., Pham X. N., and **Tran P. T.**, ''Performance Analysis of Energy Harvesting-Based Full-Duplex Decode-and-Forward Vehicle-to-Vehicle Relay Networks with Nonorthogonal Multiple Access'', *Wireless Communications and Mobile Computing*, vol. 2019, Article ID 6097686, pp. 1-11, 2019.

[J7] Rejfek L., Nguyen T. N., Chmelar P., Beran L., and **Tran P. T.**, ''Neural Networks Application for Processing of the Data from the FMICW Radars'', *Symmetry*, vol. 2019, no. 11, Article ID 1308, 2019.

[J8] Nguyen B. C., Hoang T. M., **Tran P. T.**, and Tan N. Nguyen, ''Outage Probability of NOMA System with Wireless Power Transfer at Source and Full-Duplex Relay'', *AEU - International Journal of Electronics and Communications*, Article ID 152957, 2019.

[J9] Hung D. T., Duy T. T., **Tran P. T.**, Trinh D. Q. and Hanh T., ''Performance Comparison between Fountain Codes-Based Secure MIMO Protocols with and without Using Non-Orthogonal Multiple Access'', *Entropy*, pp. 1-23, 2019.

[J10] Tin P. T., Nguyen T. N., Sang N. Q., Duy T. T., **Tran P. T.**, and Voznak M., ''Rateless Codes-Based Secure Communication Employing Transmit Antenna Selection and Harvest-To-Jam under Joint Effect of Interference and Hardware Impairments '', *Entropy*, vol. 21, no. 7, pp. 1-18, 2019.

[J11] Rejfek L., Kouba D., Mosna Z., Knizova P. K., **Tran P. T.**, Dong C. S-T., ''Passive ionospheric radar builds with USRP N210'', *Journal of Electrical Engineering*, vol. 70, no. 2, pp. 159-164, 2019.

[J12] Tin P. T., Nam P. M., Sang N. Q., Duy T. T., **Tran P. T.,** and Voznak M., '' Secrecy Performance of TAS/SC-Based Multi-Hop Harvest-to-Transmit Cognitive WSNs Under Joint Constraint of Interference and Hardware Imperfection '', *Sensors,* vol. 19, no. 5, pp. 1-20, 2019.

[J13] Nguyen T.N., Quang Minh T.H., **Tran P.T.**, Voznak M., and Duy T.T., ''Performance Enhancement for Energy Harvesting Based Two-Way Relay Protocols in Wireless Ad-hoc Networks with Partial and Full Relay Selection Methods'', *Ad Hoc Networks,* vol. 84, pp. 178-187, 2019.

[J14] Nguyen B. C., Hoang T. M., and **Tran P. T.**, ''Performance analysis of full-duplex decode-and-forward relay system with energy harvesting over Nakagami-m fading channels'', *AEU - International Journal of Electronics and Communications*, vol. 98, pp. 114-122, 2019.

[J15] Nguyen T. N., Tran M., **Tran P. T.**, Tin P. T., Nguyen T. L., Ha D. H., and Voznak M., ''On the Performance of Power Splitting Energy Harvested Wireless Full-Duplex Relaying Network with Imperfect CSI over Dissimilar Channels'', *Security and Communication Networks*, vol. 2018, pp. 178-187, 2018.

[J16] Nguyen T. N., Tin P. T., Ha D. H., Voznak M., **Tran P. T.**, Tran M., and Nguyen T. L., ''Hybrid TSR-PSR alternate energy harvesting relay network over rician fading channels: Outage probability and SER analysis'', *Sensors*, vol. 18, no. 11, pp. 1-15, 2018.

[J17] Nguyen T.N., **Tran P.T.**, and Voznak M., ''Power splitting–based energy-harvesting protocol for wireless-powered communication networks with a bidirectional relay'', *International Journal of Communication Systems*, vol. e3721, 2018.

[J18] Nguyen T.N., Quang Minh T.H., **Tran P.T.,** and Voznak M., ''Energy Harvesting over Rician Fading Channel: A Performance Analysis for Half-Duplex Bidirectional Sensor Networks under Hardware Impairments'', *Sensors*, vol. 18, no. 6, pp. 1-22, 2018.

[J19] Nguyen T.N., Quang Minh T.H., **Tran P.T.**, and Voznak M., ''Adaptive Energy Harvesting Relaying Protocol for Two-Way Half-Duplex System Network over Rician Fading Channels'', *Wireless Communications and Mobile Computing*, vol. 2018, 2018.

[J20] Nhan N. H. K., Minh T. H. Q., Van H. V., **Tran P. T.**, Nguyen T. N., and Voznak M., ''Improving optical performance of multi-chip white LEDs by bi-layers remote-packaging phosphors'', *Journal of Optoelectronics and Advanced Materials*, vol. 20, no. 3-4, pp. 93-97, 2018.

[J21] Nguyen T.N., Tran P.T., Quang Minh T.H., Voznak M., and Sevcik L., ''Two-Way Half Duplex Decode and Forward Relaying Network with Hardware Impairment over Rician Fading Channel: System Performance Analysis'', *Elektronika ir Elektrotechnika*, vol. 24, no. 2, pp. 74-78, 2018.

[J22] Nguyen T. N., **Tran P. T.**, Nguyen H-S., Do D-T., and Voznak M., ''On the Performance of a Wireless Powered Communication System Using a Helping Relay'', *Radioengineering*, vol. 26, no. 3, pp. 860-868, 2017.

[J23] Anh N. D. Q., Lee H. Y., **Phuong T. T.**, Nhan N. H. K., Minh T. H. Q., and Ly T. H., ''Y2O3:Eu3+ phosphor: a novel solution for an increase in color rendering index of multi-chip white LED packages'', *Journal of the Chinese Institute of Engineers*, 2017.

[J24] Nguyen T. N., Duy T. T., Luu G-T., **Tran P. T.**, and Voznak M., ''Energy Harvesting-based Spectrum Access with Incremental Cooperation, Relay Selection and Hardware Noises'', *Radioengineering*, vol. 26, no. 1, pp. 240-250, 2017.

[J25] Nguyen T.N., Do D.T., **Tran P.T.**, and Voznak M., "Time Switching for Wireless Communications with Full-Duplex Relaying in Imperfect CSI Condition", *KSII Transactions on Internet and Information Systems*, vol. 10, no. 9, pp. 4223-4239, 2016.

[J26] Nguyen T.N., Duy T.T., **Tran P.T.**, and Voznak M., "Performance Evaluation of User Selection Protocols in Random Networks with Energy Harvesting and Hardware Impairments", *Advances in Electrical and Electronic Engineering,* vol. 14, no. 4, pp. 372-377, 2016.

[J27] **Tran P.T.**, "Optimization of Power Allocation and Sum Rate in MIMO Relay Networks", *Advances in Smart Systems Research,* vol. 4, no. 1, pp. 44-60, 2015.

Conferences

[C1] Rejfek L., **Tran P. T.**, Chau D. S. T., Fiser O., Chmelar P., Pitas K., and Bezousek P., ''Automatic analysis of the signals from the FMICW radars'', *The 29th International Conference Radioelektronika (Radioelektronika 2019)*, Pardubice, Czech Republic, 2019.

[C2] Lo H-Y., Lehnert J. S., and Tran P. T., ''Secrecy Capacity for an Underwater Acoustic Channel with a Dominant Noise Source'', *The 9th Annual Computing and Communication Workshop and Conference (CCWC 2019)*, U.S.A., 2019 (Best Paper Award).

[C3] Lo H-Y., Lehnert J.S., and **Tran P.T**., ''Performance Analysis for MIMO HF Communications with Dominant Galactic Noise'', *Military Communications for the 21st Century (MILCOM 2018)*, U.S.A., 2018 (accepted).

[C4] Lo H-Y., Lehnert J.S., and **Tran P.T**., ''The Tail Distribution of the Sum of Kappa Random Variables with Unequal Weight and Correlation'', *The 39th IEEE Sarnoff Symposium (IEEE Sarnoff 2018)*, U.S.A., 2018.

[C5] Lo H-Y., Lehnert J.S., and **Tran P.T**., ''Performance Analysis for HF Communication with Dominant Noise Source'', *The 39th IEEE Sarnoff Symposium (IEEE Sarnoff 2018)*, U.S.A., 2018.

[C6] Nguyen T. N., Tin P. T., **Tran P. T.**, Minh T. H. Q., and Voznak M., ''Power-splitting protocol in power beacon-assisted energy harvesting full-duplex relaying networks: Performance analysis'', *The 11th IFIP Wireless and Mobile Networking Conference (WMNC 2018)*, Czech Republic, 2018.

[C7] Nguyen T.N., **Tran P.T.,** Nguyen D., and Voznak M., ''Outage and Intercept Probability Analysis for Energy-Harvesting-Based Half-Duplex Relay Networks Assisted by Power Beacon under the Existence of Eavesdropper'', *5th International Conference on Advanced Engineering – Theory and Applications (AETA 2018)*, Czech Republic, 2018.

[C8] Tin P. T., Nam P.M., Duy T.T., **Tran P.T.,** Nguyen Kieu T., and Voznak M., ''Throughput Analysis of Power Beacon-Aided Multi-hop Relaying Networks Employing Non-Orthogonal Multiple Access With Hardware Impairments'', *5th International Conference on Advanced Engineering – Theory and Applications (AETA 2018)*, Czech Republic, 2018.

[C9] Lo H-Y., Lehnert J.S., Lehnert S.J., and **Tran P.T.,** ''Interference Modeling for Diffusion-Based Molecular Communication with Receptor Antagonist'', *The 18th International Conference on Nanotechnology (IEEE NANO 2018)*, Ireland, 2018.

[C10] Nguyen T. N., **Tran P. T.**, Voznak M., and Behan L., ''Performance of Time Switching Based Energy Harvesting for Amplify-and-Forward Half-Duplex Relaying with Hardware Impairment'', *Proceedings of the 27th International Conference Radioelektronika (Radioelektronika 2017)*, Brno, Czech Republic, 2017.

[C11] Tin P.T., Duy T.T., **Tran P.T.**, and Voznak M., ''Secrecy Performance of Joint Relay and Jammer Selection Methods in Cluster Networks: With and Without Hardware Noises'', *Proceedings of 3nd International Conference on Advanced Engineering – Theory and Applications (AETA 2016)*, South Korea, 2016.

[C12] Nguyen T.N., **Tran P.T.**, Nguyen H.S., Nguyen T.Q.T., and Voznak M., ''On the Performance of Energy Harvesting for Decode-and-Forward Full-Duplex Relay Networks in Imperfect CSI Condition'', *Proceedings of 3nd International Conference on Advanced Engineering – Theory and Applications (AETA 2016)*, South Korea, 2016.

[C13] Nguyen T.N., **Tran P.T.**, Hoang H.G., Nguyen H.S., and Voznak M., ''On the Performance of Decode-and-Forward Half-Duplex Relaying with Time Switching Based Energy Harvesting in the Condition of Hardware Impairment'', *Proceedings of the International Conference on Advances in Information and Communication Technology (ICTA 2016)*, Vietnam, 2016.

[C14] **Tran P.T.**, "Optimization of Mobility Control in Mobile Wireless Networks for Energy Saving", *Proceedings of the 2nd International Conference on Advanced Engineering – Theory and Applications, AETA 2015,* Vietnam, 2015.

[C15] Nguyen T.N., **Tran P.T.**, and Voznak M., "A Novel Compressed Sensing Approach to Speech Signal Compression", *Proceedings of the 2nd International Conference on Advanced Engineering – Theory and Applications, AETA 2015,* Vietnam, 2015.

[C16] **Tran P.T**, Lehnert J. S., "Joint Optimization of Power Allocation and Integer Coefficients of Relay Functions in Compute-and-Forward Relay Networks," *Proceedings of the International Conference on Advanced Technologies in Communications, ATC14'*, Hanoi, Vietnam, Oct. 2014.

[C17] **Tran P.T.**, Lehnert J. S., "Joint optimization of relay selection and power allocation in cooperative OFDM networks with imperfect channel estimation," *Proceedings of the Wireless Communications and Networking Conference, WCNC 2012*, Paris, France, Apr. 2012.

[C18] **Tran P.T.**, Lehnert J. S., "Joint optimization of power allocation and cooperation in wireless OFDM networks," *Proceedings of the International Conference on Advanced Technologies in Communications, ATC09'*, Hai Phong, Vietnam, Oct. 2009.

[C19] Pham L.H., **Tran P.T.**, "Rate Adaptive in Multicode MC-CDMA Systems," *Proceedings of The 10th Biennial Conference on Radio Electronics*, Hanoi, Vietnam, Nov. 2006.

[C20] Le T. T., Hoang C. D., Nguyen T. T., **Tran P.T.**, "Using Wavelets for denoising in digital communication systems," *Proceedings of The 8th Technology Conferences - Ho Chi Minh City University of Technology*, Ho Chi Minh City, Vietnam, Apr. 2002.

Technical Report

[T1] **Tran P.T.**, Nguyen D.T., "Building a simulation models of mobile communication systems for teaching purpose," *Ton Duc Thang University Research Project - Technical Report*, December 2006 (in Vietnamese).

[T2] Pham L.H, **Tran P.T.**, Nguyen D.T., and Vo Son Q., "Traffic Control in Communication Networks - ATM, MPLS, CDMA, MC-CDMA and WDM Networks," *The Ministry Level Research Project - Technical Report* (in Vietnamese), Mar. 2006 (in Vietnamese).

Thesis / Dissertation

[D1] **Tran P. T.**, "Analysis and optimization of cooperative wireless networks," *PhD Dissertation,* Purdue University, 2013.

[D2] **Tran P. T.**, "Investigating of solutions for capacity improving of MC-CDMA Systems," *Master Thesis,* Ho Chi Minh City University of Technology, Jul. 2005.

AWARDS

Vietnam Education Foundation Fellowship (August, 2007 to August 2009) (for PhD studying in U.S.).
Motorola Scholarship for Excellent Academic Record (April, 20th, 2001).
Fujikura Scholarship for Excellent Academic Record (March, 22nd, 2001).
Encouraging Award of the Vietnamese National Mathematics Olympiad (1997).

CERTIFICATIONS

IEEE Wireless Communication Professional (WCP), 2013, 2018.

PROFESSIONAL AFFILIATIONS

IEEE Senior Member, since 2020.
IEEE Member, since 2014.
IEEE Graduate Student Member, 2006 – 2013.
Fellow of Vietnam Education Foundation, 2007-2013.

SERVICE

AETA 2015, 2016, 2017, 2018, and 2019 Conference Organizing Committee, Co-Organizing Chair, 2015 - 2019.
Vietnamese International Student Association at Purdue University (V.I.P.), Member of Advisory Board, 2010 – 2013.

REFERENCE

Prof. James S. Lehnert, Department of Electrical and Computer Engineering, Purdue University, IN 47907, U.S.A. Email: lehnert@purdue.edu.

Assoc. Prof. Hong-Lien Pham, Faculty of Electrical and Electronics Engineering, Ho Chi Minh City University of Technical Education, 1 Vo Van Ngan St., Thu Duc Dist., Ho Chi Minh City, Vietnam. Email: lienph@hcmute.edu.vn.

Dr. Duy H. Vo, Vice President - Dean of Faculty of Electrical and Electronics Engineering, Ton Duc Thang University, 19 Nguyen Huu Tho St., Tan Phong Ward, Dist. 7, Ho Chi Minh City, Vietnam. Email: vohoangduy@tdtu.edu.vn.