Khac-Hoang NGO

Postdoctoral Researcher

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Vietnamese

Research Interests

Wireless Communications, Information Theory

Topics: massive random access, federated learning, edge computing, MIMO, noncoherent communications, coded caching, network coding

Education

CentraleSupélec, Paris-Saclay Univ., France

Ph.D. in Wireless Communications — Jul. 2017– Jun. 2020
Thesis: Noncoherent Wireless Communications: Fundamental Limits and System Design
Advisors: Prof. Sheng Yang, Dr. Maxime Guillaud
Prizes: **Signal, Image & Vision Ph.D. Thesis Prize**; **"Impact Science" Second Prize**

M.Sc. in Wireless Communications — Sep. 2015–Sep. 2016
Thesis: Performance Analysis of Coded Caching
Advisors: Prof. Mari Kobayashi, Prof. Sheng Yang
GPA: **17.35/20** *Class rank*: **1/23**

Univ. of Engineering and Technology (UET), Vietnam National Univ. - Hanoi (VNU), Vietnam

B.Eng. in Electronics and Telecommunications — Aug. 2010–Jun. 2014
Thesis: Software-Defined-Radio Implementation of OFDM-based Physical Layer Network Coding
Advisors: Assoc. Prof. Nguyen Linh Trung, Assoc. Prof. Nguyen Quoc Tuan
GPA: **3.75/4.0** *Class rank*: **1/68**

Chalmers Univ. of Technology, Sweden

Diploma in Teaching and Learning in Higher Education — Ongoing
Completed courses:
- Diversity and inclusion for learning in higher education (2 credits)
- University teaching and learning (2.5 credits)
- Theoretical perspectives on learning (2.5 credits)
- Supervising research students (3 credits)
- Supervising writing processes (2.5 credits)

Project Experience

Participated in for the following projects, and involved* or taken lead** in writing proposals

- ***Wallenberg AI, Autonomous Systems and Software Program (WASP)** — 2023–2027
  Title: Theory for the Privacy-Security Trade-off in Federated Learning
  Role: **Co-Investigator**

- ****Marie Skłodowska-Curie Individual Fellowship** #101022113 — 2021–2023
  Title: LANTERN: Low-latency and private edge computing in random-access networks
  Role: **Principle Investigator** *Amount:* **EUR 192,000**

- ***ICT Virtual Organization of ASEAN Institutes and Japan's NICT (ASEAN IVO)** — 2022–2024
  Title: Agricultural IoT based on Edge Computing
  Role: **Project Member** *Amount:* **USD 80,000**

- ***AlumNode* Funding, Klaus Tschira Foundation** 2021–2022
  Title: Connecting the Unconnected: A Tool for Digital Inclusion
  Role: **Co-Investigator** *Amount:* **EUR 5,000**
- **CentraleSupélec & Huawei Technologies France** 2015–2016
  Titile: Online Coded Caching: Fundamental Limits and Efficient Learning Algorithms
  Role: **Project Member**
- **Vietnam Ministry of Science and Technology** #39/2012/HD/NDT 2012–2016
  Title: Cross-layer cooperative communications for future wireless networks based on network coding
  Role: **Project Member**

Selected Honors, Awards, and Scholarships

- **Qualification for the functions of university professor/lecturer**, National Council of Universities (CNU), France 2023
- Featured in the **spotlight** of the 9th Heidelberg Laureate Forum, Germany 2022
- **Marie Skłodowska-Curie Actions** Individual Fellowship 2021
- **Best Paper Award**, Int. Conf. Adv. Technol. Commun. (ATC), Vietnam 2021
- **Signal, Image & Vision Ph.D. Thesis Prize** by EEA, GRETSI and GdR-ISIS, France 2021
- "**Impact Science**" **Second Prize** for Ph.D. thesis, CentraleSupélec Foundation, France 2021
- **Romberg Grant** for selected participants of the 7th Heidelberg Laureate Forum, Germany 2019
- **10-out-of-200 list** of participants of the 7th Heidelberg Laureate Forum, Germany 2019
- **Graduate with first-class honors** (Master level), CentraleSupélec 2016
- **Université Paris-Saclay scholarship** for international Master students 2015–2016
- **Graduate with first-class honors** (Bachelor level), UET, VNU 2014
- **Excellent Undergraduate Thesis Award**, UET, VNU 2014
- **Third Prize**, Undergraduate Scientific Research Contest, UET, VNU 2014
- **Honda Young Engineers and Scientists Award**, Honda Foundation, Japan 2013
  Awarded to 10 selected students from top 6 Vietnamese universities in natural science, engineering and technology
- **Outstanding Young Face**, VNU 2012, 2013
  Awarded to selected students and junior staffs of VNU for excellent academic achievements and service
- **Undergraduate Research Attachment Programme Grant**, National Univ. of Singapore 2012
- **Shinnyo scholarship**, Shinnyo-en Organization, Japan 2010–2014 (annually)
- **Vallet scholarship**, Rencontres du Vietnam 2011
  Awarded to 138 outstanding students from the north of Vietnam; granted by Prof. Odon Vallet, France.
- 2nd **Prize** in Physics and 4th **Prize** in Mathematics in provincial contest for high-school students 2010

Work Experience

- **Communication System Group, Dept. Electrical Engineering, Chalmers Univ. of Technology, Sweden**
  Postdoctoral Researcher Sep. 2020–present
  Topic: Low-latency and private edge computing in random-access networks
  Advisors: Prof. Giuseppe Durisi, Prof. Alexandre Graell i Amat
- **Advanced Institute of Engineering and Technology (AVITECH), UET, VNU, Vietnam**
  Adjunct Lecturer Mar. 2021–present
  Role: Participate in research discussion and proposal writing

- **Mathematical and Algorithmic Sciences Lab., Paris Research Center, Huawei Technologies France**
  PH.D. ENGINEER Nov. 2016–Jun. 2020
  Topic: Noncoherent wireless communications —fundamental limits and system design
  Advisors: Dr. Maxime Guillaud
- **Laboratory of Signals and Systems (L2S) - CentraleSupélec**, France
  RESEARCH ENGINEER Sep. 2016–Nov. 2016
  RESEARCH STUDENT Feb. 2016–Sep. 2016
  Topic: Coded caching in practical scenarios, namely, 1) with non-uniform demands, 2) with asynchronous and random user arrivals, and 3) in MIMO broadcast downlink channel
  Advisors: Prof. Mari Kobayashi, Prof. Sheng Yang
- **Univ. of Engineering and Technology (UET), VNU**, Vietnam
  RESEARCH ASSISTANT Jul. 2014–Aug. 2015
  RESEARCH STUDENT Nov. 2012–Jun. 2014
  Topic: Software-defined radio implementation of network coding in OFDM-based two-way relay network and its extension to VFDM-based cognitive radio.
  Advisors: Assoc. Prof. Nguyen Linh Trung, Assoc. Prof. Nguyen Quoc Tuan
- **VNPT Technology, Vietnam Posts and Telecommunications Group**, Vietnam
  INTERN Dec. 2013–Mar. 2014
  Topic: Website interface programming for a subscriber management website
- **Dept. of Electrical and Computer Engineering, National Univ. of Singapore (NUS)**, Singapore
  INTERN Jul. 2012–Aug. 2012
  Topic: Solar panel charge controller: Analyze the characteristics of solar cell by experiments; design a solar cell circuit to sufficiently supply for an indoor robot and propose the charge controller mechanism
  Advisor: Prof. Aaron Danner

Academic Experience

Teaching

- **Chalmers Univ. of Technology: teaching assistant**
  - **Information theory** Spring 2023
    Course level: master/PhD *Language:* English *Duration:* 4h
  - **Wireless Communications** Spring 2023
    Course level: master *Language:* English
    Role: Give 6h of exercise sessions and 4h of flipped-classroom lectures
    Handle a group project and an oral exam
    Final-exam preparation and grading
  - **Statistics and machine learning in high dimensions** Fall 2022
    Course level: master/PhD *Language:* English *Duration:* 8h
  - **Statistics and machine learning in high dimensions** Fall 2021
    Course level: master/PhD *Language:* English *Duration:* 8h
  - **Information theory** Spring 2021
    Course level: master/PhD *Language:* English *Duration:* 16h
- **Guest Lectures/Tutorials**
  - **Unsourced Multiple Access for the Internet of Things** 14 Jun. 2022
    H2020 INCOMING Summer School, Chalmers University of Technology, Gothenburg, Sweden
    Language: English *Duration:* 2h

Supervision

- **Master student research projects: co-supervisor**
  - **MIMO detection under generalized Gaussian model** Mar. 2021
    Students: Khodor SAFA and Shanglin YANG
    University: CentraleSupélec, Paris-Saclay Univ.
  - **Embracing non-linearities in future wireless systems via nonconvex optimization** Feb.-Mar. 2020
    Students: Wassim KHELIL, Mohamed Idriss KHALEDI, and Anas OUALLOU
    University: CentraleSupélec, Paris-Saclay Univ.

Professional Activities and Service

Membership

- Institute of Electrical and Electronics Engineers (IEEE) (S'17, M'20) and
  - IEEE Information Theory Society
  - IEEE Communications Society
  - IEEE Signal Processing Society
  - IEEE Young Professionals
- Association for Computing Machinery (ACM)

Conference Organizing Committee

- *Technical Program Committee member*, Joint EuCNC & 6G Summit, Gothenburg, Sweden Jun. 2023
- *Technical Program Committee member*, 26th Int. ITG Workshop Smart Antennas & 13th Conference on Systems, Communications, and Coding (WSA&SCC 2023), Braunschweig, Germany Feb. 2023
- *Technical Program Committee member*, 11th Int. Symp. Inf. Commun. Technol. (SoICT), Hanoi, Vietnam Dec. 2022
- *Communication track chair,* 2022 Int. Conf. Adv. Technol. Commun. (ATC), Hanoi, Vietnam Oct. 2022
- *Track chair*, 1st Int. Conf. Intelligence of Things (ICIT), Hanoi, Vietnam Aug. 2022
- *Special session chair,* 25th Int. ITG Workshop on Smart Antennas (WSA 2021), France Nov. 2021
- *Special session chair,* 2021 Int. Conf. Adv. Technol. Commun. (ATC), HCM City, Vietnam Oct. 2021
- 1st Junior Conf. Wireless & Optical Commun., Paris-Saclay Univ., France Feb. 2019
- 1st Young Engineers and Scientists (Y-E-S) Forum, Honda Foundation, Japan Nov. 2015

Editorship

- **Copyeditor** for ICT Research Journal, Vietnam Ministry of Information and Communications 2021

Review

International Journals

- IEEE Trans. Inf. Theory
- IEEE Trans. Wireless Commun.
- IEEE Trans. Veh. Technol.
- IEEE Trans. Commun.
- IEEE Trans. Signal Process.
- IEEE Trans. Signal Inf. Process. Netw.
- IEEE Internet Things Journal
- IEEE J. Sel. Areas Inf. Theory
- IEEE J. Sel. Areas Commun.
- IEEE Communications Letter
- IEEE Wireless Communications Letter
- IEEE Vehicular Technology Magazine
- IET Electronics Letter
- Elsevier Pervasive Mob. Comput.

Domestic Journals

- ICT Research Journal, Vietnam Ministry of Information and Communications
- VNU Journal of Science: Computer Science and Communication Engineering, Vietnam

International Conferences

- IEEE Int. Symp. Inf. Theory (ISIT): 2020, 2022, 2023
- IEEE Inf. Theory Workshop (ITW): 2018, 2021
- IEEE Global Commun. Conf. (GLOBECOM): 2017
- IEEE Int. Conf. Commun. (ICC): 2017, 2018
- IEEE Wirel. Commun. Netw. Conf. (WCNC): 2022
- IEEE Workshop Signal Process. Adv. Wireless Commun. (SPAWC): 2019
- IEEE Int. Conf. Acoustics, Speech, and Signal Process. (ICASSP): 2023
- IEEE Stat. Signal Proces. Workshop (SSP): 2023
- Int. Symp. Topics Coding (ISTC): 2018
- Asilomar Conf. Signals, Systems, and Computers: 2021, 2022
- Int. Symp. Wireless Commun. Systems (ISWCS): 2018, 2021
- Int. Symp. Commun. Info. Technol. (ISCIT): 2019
- Int. ITG Workshop Smart Antennas (WSA): 2021, 2023
- Int. Conf. Adv. Technol. Commun. (ATC): 2021, 2022
- IEEE-RIVF Int. Conf. Comput. Commun. Technol.: 2022
- NAFOSTED Conf. Info. Comput. Science (NICS): 2018
- APSIPA Annual Summit and Conference: 2022

Institutional Service in Department, University, and Association

Activities

- Online workshop *Data Science, Machine Learning, and Artificial Intelligence in Digital Transformation* (in Vietnamese) Nov. 2021
- Online workshop *ICT Convergence - Shaping the Future of Vietnam* (in Vietnamese) Oct. 2020
- Organize seminars for Vietnamese researchers in telecommunications Since 2021
- Popular science lecture *Wireless Communications: Basics and Applications* (in Vietnamese) Jun. 2020
- Organize various student activities at UET, VNU, Vietnam 2011-2015

Positions

- **Administrator** of telecom-vn – a Facebook group for Vietnamese researchers in telecommunications
- **Vice-president** of Student Association of UET, VNU, Vietnam Apr. 2012–Jun. 2015
- **President** of Student Club on Presentation of UET, VNU, Vietnam Apr. 2011–Jun. 2012

Invited Talks

- **Unsourced Multiple Access: An Information-Theoretic Analysis**
  - National Institute for Research in Digital Science and Technology (INRIA), Lyon, France 20 Apr. 2023
  - CentraleSupélec, Paris-Saclay University, France 19 Jan. 2023
- **Unsourced Multiple Access With Common Alarm Messages: Network Slicing for Massive and Critical Internet of Things**
  - Zugspitze Workshop on Communications, Zugspitze, Germany 24 Jan. 2023
  - Equipe Traitement de l'Information et Systèmes (ETIS), France, 11 Oct. 2022
- **Age of Information in Prioritized Random Access With Energy Harvesting**
  - German Aerospace Center (DLR), Munich, Germany 28 Sep. 2022

- **Noncoherent Wireless Communications: Fundamental Limits and System Design**
  - 28th Francophone Symposium on Signal and Image Processing (GRETSI), France 08 Sep. 2022
  - Scientific Council Meeting, CentraleSupélec Foundation, France 06 Dec. 2021
  - 60th Annual Congress of Teachers-Researchers Club in Electronics, Electrotechnics and Automation (Club EEA), France 11 Jun. 2021
  - Doctoral Students Day, CentraleSup élec, Paris-Saclay University, France 28 Jun. 2018
  - Faculty of Electronics and Telecommunications, UET, VNU, Vietnam 11 Nov. 2017
- **Massive Uncoordinated Random Access for the Internet of Things**
  - Advanced Institute of Engineering and Technology (AVITECH), UET, VNU, Vietnam 11 May 2021
- **Constellation Design for Noncoherent Communications in SIMO Block-Fading Channel**
  - Advanced Institute of Engineering and Technology (AVITECH), UET, VNU, Vietnam 27 Aug. 2019
- **An Achievable DoF Region for the Two-User Noncoherent MIMO Broadcast Channel with Statistical CSI**
  - Technical University of Munich, Germany 22 Sep. 2017
- **On the Complementary Roles of Massive MIMO and Coded Caching**
  - Laboratory of Signals and Systems, UET, VNU, Vietnam 25 Aug. 2016

Summer Schools Attended

- IEEE SPS - EURASIP Summer School on "Defining 6G: Theory, Applications, and Enabling Technologies" Aug. 2022
- IEEE ComSoc Summer School on 5G, IoT, and AI technologies Aug. 2020
- IEEE SPS - EURASIP Summer School on Signal Processing for 5G Sweden, May. 2017
- IEEE ITS European School of Information Theory Spain, May. 2017

Events

- 7th and 9th Heidelberg Laureate Forum, Germany Sep. 2019, Sep. 2022
- 2nd and 3rd Global Young Vietnamese Scholars Forum, Vietnam Nov. 2019, Nov. 2020
- Young Engineers and Scientists Tokyo Meeting, Tokyo, Japan Nov. 2014
- Volunteer for conferences: IEEE ICC 2017, IEEE ISIT 2019
- JENESYS 2.0 culture exchange program, Japan, Jul. 2014
- Vietnam - China Youth Festival, Guangxi, China, Nov. 2013

Skills

Computer and Programming

- MATLAB/Simulink, C/C++, python
- GNU Radio framework for Software-Defined Radio
- LaTeX, Microsoft Office

Mathematics

- Linear Algebra, Probability and Statistics, Real and Complex Analysis, Optimization

Languages

Vietnamese: Native **English:** Fluent **French:** Elementary **Swedish:** Beginner

Media Coverage

- An interview in the spotlight of the 9th Heidelberg Laureate Forum
- An interview with docteurs-spi.org about my PhD journey
- An interview in the 10-out-of-200 participants of the 7th Heidelberg Laureate Forum
- An interview with Honda Foundation: Part 1/4, Part 2/4, Part 3/4, Part 4/4

Hobbies

- Practicing sports: running (half-marathon 1h30′25″, full marathon 3h30′30″), badminton, swimming
- Reading books (favorite author: Haruki Murakami)
- Listening to music

References

1. **Prof. Giuseppe Durisi** (Postdoc Advisor)
   Department of Electrical Engineering, Chalmers University of Technology
   Hörsalsvägen 11, EDIT trappa C, D och H, Floor 6, SE-412 96 Gothenburg, Sweden
   durisi@chalmers.se +46 31 772 18 02
2. **Prof. Alexandre Graell i Amat** (Postdoc Advisor)
   Department of Electrical Engineering, Chalmers University of Technology
   Hörsalsvägen 11, EDIT trappa C, D och H, Floor 6, SE-412 96 Gothenburg, Sweden
   alexandre.graell@chalmers.se +46 31 772 17 53
3. **Prof. Sheng Yang** (Master and Doctoral Advisor)
   Department of Telecommunications, CentraleSupélec
   A4-19, 3 rue Joliot-Curie, 91192 Gif-sur-Yvette, France
   sheng.yang@centralesupelec.fr +33 (0)1 69 85 14 50
4. **Dr. Maxime Guillaud** (Doctoral Advisor)
   Mathematical and Algorithmic Sciences Laboratory, Paris Research Center, Huawei Technologies France
   Bât. A, 20 quai du Point du Jour, 92100 Boulogne Billancourt, France
   maxime.guillaud@huawei.com
5. **Prof. Mari Kobayashi** (Master Advisor)
   Institute for Communication Engineering, Technical University of Munich (TUM)
   Building N4, TheresienStrasse 90, 80333 Munich, Germany
   mari.kobayashi@tum.de +49 89 289 23086
6. **Assoc. Prof. Nguyen Linh Trung** (Bachelor Advisor)
   Faculty of Electronics and Telecommunications, UET, VNU
   G2-206, 144 Xuan Thuy St., Cau Giay Dist., Hanoi, Vietnam
   linhtrung@vnu.edu.vn +84 (0)4 3754 9271

List of Publications

- Google Scholar Profile: https://scholar.google.com/citations?user=RjcW6WwAAAAJ&hl=en
- Google Scholar Statistics (updated: 4 April 2023): #citations: **299**, h-index: **9**, i10-index: **8**
- Peer-reviewed: **31**, First-authorships: **22**

Publications by Category

Book chapters

1. L.-T. Nguyen, T.-T.-Q. Tran, **Khac-Hoang Ngo**, and V.-L. Nguyen, "Cogitive physical-layer network coding," in *Two-Way Relay Communications: Theory and Implementation*, L.-T. Nguyen, N.-Q.-B. Vo, and T.-T.-Q. Tran, Eds., Languague: Vietnamese, Hanoi, Vietnam: VNU Publishing House, Jun. 2022, ch. 8.
2. V.-L. Nguyen, **Khac-Hoang Ngo**, T.-T.-Q. Tran, V.-H. Le, and L.-T. Nguyen, "Physical-layer network coding for SDR-based multimedia transmissions," in *Two-Way Relay Communications: Theory and Implementation*, L.-T. Nguyen, N.-Q.-B. Vo, and T.-T.-Q. Tran, Eds., Languague: Vietnamese, Hanoi, Vietnam: VNU Publishing House, Jun. 2022, ch. 10.
3. T.-T.-Q. Tran, **Khac-Hoang Ngo**, V.-L. Nguyen, H.-S. Do, and L.-T. Nguyen, "Setting up an SDR testbed for OFDM systems," in *Two-Way Relay Communications: Theory and Implementation*, L.-T. Nguyen, N.-Q.-B. Vo, and T.-T.-Q. Tran, Eds., Languague: Vietnamese, Hanoi, Vietnam: VNU Publishing House, Jun. 2022, ch. 9.
4. T.-T.-Q. Tran, V.-L. Nguyen, **Khac-Hoang Ngo**, L.-T. Nguyen, Q.-T. Nguyen, V.-H. Le, N.-Q.-B. Vo, and X.-N. Tran, "Implementation of cognitive physical-layer network coding based on OFDM/VFDM," in *Two-Way Relay Communications: Theory and Implementation*, L.-T. Nguyen, N.-Q.-B. Vo, and T.-T.-Q. Tran, Eds., Languague: Vietnamese, Hanoi, Vietnam: VNU Publishing House, Jun. 2022, ch. 11.

Journal papers

1. **Khac-Hoang Ngo**, G. Durisi, A. Graell i Amat, P. Popovski, A. E. Kalor, and B. Soret, "Unsourced multiple access with common alarm messages: Network slicing for massive and critical IoT," *submitted to IEEE Trans. Commun.*, Feb. 2023.
2. **Khac-Hoang Ngo**, A. Lancho, G. Durisi, and A. Graell i Amat, "Unsourced multiple access with random user activity," *IEEE Trans. Inf. Theory*, Feb. 2023.
3. G. Gur, A. Kalla, C. de Alwis, Q.-V. Pham, **Khac-Hoang Ngo**, M. Liyanage, and P. Porambage, "Integration of ICN and MEC in 5G and beyond networks: Mutual benefits, use cases, challenges, standardization, and future research," *IEEE Open J. Commun. Soc.*, **3**, 1382–1412, Aug. 2022.
4. **Khac-Hoang Ngo**, S. Yang, M. Guillaud, and A. Decurninge, "Joint constellation design for noncoherent MIMO multiple-access channels," *IEEE Trans. Inf. Theory*, Jul. 2022.
5. A. U. Rahman, F. Fourati, **Khac-Hoang Ngo**, A. Jindal, and M.-S. Alouini, "Network graph generation through adaptive clustering and infection dynamics: A step towards global connectivity," *IEEE Commun. Lett.*, **26**, (4), 783–787, Jan. 2022, preprint: https://arxiv.org/pdf/2111.10690.pdf.
6. F. Zhang, **Khac-Hoang Ngo**, S. Yang, and A. Nosratinia, "Transmit correlation diversity: Generalization, new techniques, and improved bounds," *IEEE Trans. Inf. Theory*, **68**, (6), 3841–3869, Jan. 2022, preprint: https://arxiv.org/pdf/2104.09711.pdf (Zhang and Ngo contributed equally to the technical content).
7. **Khac-Hoang Ngo**, A. Decurninge, M. Guillaud, and S. Yang, "Cube-split: A structured Grassmannian constellation for non-coherent SIMO communications," *IEEE Trans. Wireless Commun.*, **19**, (3), 1948–1964, Mar. 2020.
8. **Khac-Hoang Ngo**, M. Guillaud, A. Decurninge, S. Yang, and P. Schniter, "Multi-user detection based on expectation propagation for the non-coherent SIMO multiple access channel," *IEEE Trans. Wireless Commun.*, **19**, (9), 6145–6161, Sep. 2020.

9. T.-T.-Q. Tran, L. V. Nguyen, **Khac-Hoang Ngo**, L.-T. Nguyen, Q.-T. Nguyen, N.-Q.-B. Vo, X.-N. Tran, E. Bastug, S. Azarian, M. Debbah, and P. Duhamel, "Network coding with multimedia transmission and cognitive networking: An implementation based on software-defined radio," *REV Journal on Electronics and Communications*, **10**, (3-4), 72–84, 2020, Invited Article.
10. **Khac-Hoang Ngo**, S. Yang, and M. Kobayashi, "Scalable content delivery with coded caching in multi-antenna fading channels," *IEEE Trans. Wireless Commun.*, **17**, (1), 548–562, Jan. 2018.

Conference papers

1. N.-S. Duong, Q.-T. Nguyen, **Khac-Hoang Ngo**, and T.-M. Dinh-Thi, "Sparse Bayesian learning with atom refinement for mmWave MIMO channel estimation," in *submitted to IEEE Statistical Signal Processing Workshop (SSP)*, Hanoi, Vietnam, Jul. 2023.
2. **Khac-Hoang Ngo**, A. Graell i Amat, and G. Durisi, "Irregular repetition slotted ALOHA over the binary adder channel," in *IEEE International Conference on Communications (ICC)*, Rome, Italy, May 2023.
3. N. T. Nguyen, N. Shlezinger, **Khac-Hoang Ngo**, V.-D. Nguyen, and M. Juntti, "Joint communications and sensing design for multi-carrier MIMO systems," in *submitted to IEEE Statistical Signal Processing Workshop (SSP)*, Hanoi, Vietnam, Jul. 2023.
4. **Khac-Hoang Ngo**, G. Durisi, A. Graell i Amat, P. Popovski, B. Soret, and A. E. Kalør, "Unsourced multiple access for heterogeneous traffic requirements," in *56th Asilomar Conference on Signals, Systems, and Computers*, **Invited Paper**, CA, USA, Oct. 2022.
5. **Khac-Hoang Ngo**, G. Durisi, and A. Graell i Amat, "Age of information in prioritized random access," in *55th Asilomar Conference on Signals, Systems, and Computers*, **Invited Paper**, CA, USA, Oct. 2021. https://arxiv.org/pdf/2112.01182.pdf.
6. **Khac-Hoang Ngo**, A. Lancho, G. Durisi, and A. Graell i Amat, "Massive uncoordinated access with random user activity," in *IEEE International Symposium on Information Theory (ISIT)*, Melbourne, Victoria, Australia, 2021, pp.3014–3019. https://arxiv.org/abs/2103.09721.
7. **Khac-Hoang Ngo**, N. T. Nguyen, T. Q. Dinh, T.-M. Hoang, and M. Juntti, "Low-latency and secure computation offloading assisted by hybrid relay-reflecting intelligent surface," in *International Conference on Advanced Technologies for Communications (ATC)*, **Best Paper Award**, Hanoi, Vietnam, Oct. 2021, pp.306–311. https://arxiv.org/pdf/2109.01335.pdf.
8. **Khac-Hoang Ngo** and S. Yang, "A generalized Gaussian model for wireless communications," in *IEEE International Symposium on Information Theory (ISIT)*, Melbourne, Victoria, Australia, 2021, pp.3237–3242. https://research.chalmers.se/en/publication/522211.
9. ——, "A Riemannian metric for non-coherent constellation design and its application to multiple access channel," in *25th International ITG Workshop on Smart Antennas*, French Riviera, France, Nov. 2021.
10. **Khac-Hoang Ngo**, S. Yang, and M. Guillaud, "The optimal DoF for the noncoherent MIMO channel with generic block fading," in *2020 IEEE Information Theory Workshop (ITW)*, Riva del Garda, Italy, Apr. 2021. https://arxiv.org/pdf/2009.11556.pdf.
11. **Khac-Hoang Ngo**, S. Yang, M. Guillaud, and A. Decurninge, "Noncoherent MIMO multiple-access channels: A joint constellation design," in *2020 IEEE Information Theory Workshop (ITW)*, Riva del Garda, Italy, Apr. 2021.
12. **Khac-Hoang Ngo**, F. Zhang, S. Yang, and A. Nosratinia, "Two-user MIMO broadcast channel with transmit correlation diversity: Achievable rate regions," in *IEEE Information Theory Workshop (ITW)*, Kanazawa, Japan, Nov. 2021.
13. **Khac-Hoang Ngo**, M. Guillaud, A. Decurninge, S. Yang, S. Sarkar, and P. Schniter, "Non-coherent multi-user detection based on expectation propagation," in *53rd Asilomar Conference on Signals, Systems, and Computers*, CA, USA, Nov. 2019, pp.2092–2096.

14. **Khac-Hoang Ngo**, A. Decurninge, M. Guillaud, and S. Yang, "A multiple access scheme for non-coherent SIMO communications," in *52nd Asilomar Conference on Signals, Systems, and Computers*, CA, USA, Oct. 2018, pp.1846–1850.
15. **Khac-Hoang Ngo**, S. Yang, and M. Guillaud, "The optimal DoF region for the two-user non-coherent SIMO multiple-access channel," in *IEEE Information Theory Workshop (ITW)*, Guangzhou, China, Nov. 2018. https://arxiv.org/pdf/1806.04102.pdf.
16. A. Ghorbel, **Khac-Hoang Ngo**, R. Combes, M. Kobayashi, and S. Yang, "Opportunistic content delivery in fading broadcast channels," in *IEEE Global Communications Conference (GLOBECOM)*, Singapore, Dec. 2017. https://arxiv.org/pdf/1702.02179.pdf.
17. **Khac-Hoang Ngo**, A. Decurninge, M. Guillaud, and S. Yang, "Design and analysis of a practical codebook for non-coherent communications," in *51st Asilomar Conference on Signals, Systems, and Computers*, CA, USA, Oct. 2017, pp.1237–1241.
18. **Khac-Hoang Ngo**, S. Yang, and M. Guillaud, "An achievable DoF region for the two-user non-coherent MIMO broadcast channel with statistical CSI," in *2017 IEEE Information Theory Workshop (ITW)*, Taiwan, Nov. 2017, pp.604–608.
19. **Khac-Hoang Ngo**, S. Yang, and M. Kobayashi, "Cache-aided content delivery in MIMO channels," in *54th Annual Allerton Conference on Communication, Control, and Computing (Allerton)*, IL, USA, Sep. 2016, pp.93–100.
20. **Khac-Hoang Ngo**, S. Yang, M. Kobayashi, and K. Huang, "On the complementary roles of massive MIMO and coded caching for content delivery," in *International Conference on Advanced Technologies for Communications (ATC)*, Hanoi, Vietnam, Oct. 2016, pp.237–242.
21. S. Yang, **Khac-Hoang Ngo**, and M. Kobayashi, "Content delivery with coded caching and massive MIMO in 5G," in *9th International Symposium on Turbo Codes and Iterative Information Processing (ISTC)*, Brest, France, Sep. 2016, pp.370–374.
22. **Khac-Hoang Ngo** and Quoc-Tuan Nguyen, "Implementation of network coding scheme in universal software radio peripheral," in *IEICE International Conference on Integrated Circuits, Design, and Verification (ICDV)*, Hanoi, Vietnam, Nov. 2014.
23. Thai-Mai Dinh Thi, Quoc-Tuan Nguyen, and **Khac-Hoang Ngo**, "Implementation of spectrum sensing scheme in software-defined radio testbed," in *IEICE International Conference on Integrated Circuits, Design, and Verification (ICDV)*, Hanoi, Vietnam, Nov. 2014.

Conference posters

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