CURRICULUM VITAE - NHAN NGUYEN

PERSONAL DETAILS AND DATE OF CV

- Surname: **Nguyen** – First name: **Nhan** (*ORICD* | *Homepage* | *LinkedIn* | *Google Scholar*)
- Contact: Pentti Kaiteran katu 1, 90570 Oulu | nhan.nguyen@oulu.fi | +358 (0) 41 496 8043

- Date of the CV: September 16, 2025

DEGREES

- *Sep. 01, 2023:* **Title of Docent** | Discipline: "Signal Processing Algorithm Design for Wireless Systems." *University of Oulu, Oulu, Finland (☎ +358 294 480 000 | 🖷 +358 8 344 064)*
- *Aug. 27, 2020:* **PhD Degree in Electrical & Information Engineering** (Best Dissertation Award) *Seoul National Univ. of Science and Tech., South Korea (☎ +82 2 970 6114 | 🖷 +82 2 970 6088)*
- *Aug. 25, 2017:* **M.Sc. Degree in Electrical and Information Engineering** (Best Thesis Award) *Seoul National Univ. of Science and Tech., South Korea (☎ +82 2 970 6114 | 🖷 +82 2 970 6088)*
- *July 22, 2014:* **B.Sc. Degree in Electronics and Telecommunication Engineering** (Excellent Graduation Award), *Hanoi University of Science and Technology, Vietnam (☎ +84 43 869 2222 | 🖷 +84 43 869 2006)*

CURRENT EMPLOYMENT

- *Feb. 02, 2024 – Present:* **Assistant Professor (tenured track), Academy Research Fellow** *Centre for Wireless Communications (CWC), University of Oulu (UOulu), Oulu, Finland*

PREVIOUS WORK EXPERIENCE

- *Sep. 3, 2020 – Jan. 31, 2024:* **Postdoctoral Researcher and Teacher**, *CWC, UOulu, Finland*.
- *Oct. 28, 2022 – Nov. 20, 2022:* **Visiting Researcher**, *Ben-Gurion Univ. & Weizmann Institute of Science, Israel.*
- *Oct. 1, 2019 – Mar. 23, 2020:* **Visiting Researcher**, *North Carolina State University, Raleigh, US*.
- *Sep. 2, 2015 – Aug. 27, 2020:* **MS & Doctoral Researcher**, *Seoul National Univ. of Science & Tech., South Korea*.
- *Sep. 1, 2014 – May 30, 2015:* **Research Assistant**, *Kyung Hee University, Suwon, South Korea*.
- *Jan. 14, 2013 – Aug. 30, 2014:* **Engineer**, *Samsung Vietnam Mobile R&D Center, Hanoi, Vietnam.*

RESEARCH FUNDING AND GRANTS

Individual research fellowships and funding:

- *Sep. 1, 2025 – Aug. 31, 2029:* **RCF Academy** project "Sustainable 6G Radio Access Networks: Methods, Models, and Algorithms (S6GRAN)," value: €266,564, role: Co-PI.
- *Jan. 1, 2025 – Dec. 31, 2025:* **Business Finland** project "Radio Adaptations for Network Energy Saving in 6G (6G RNES 2025)," value: €170,000, role: Co-PI.
- *Jan. 1, 2025 – Dec. 31, 2027:* **Joint NSF-RCF** project "Distributed Multi-Modal Sensing Aided Large-Scale MIMO Communications (DYNAMICS)," value: €400,000, role: PI.
- *Sep. 1, 2023 – Aug. 31, 2027:* **RCF Fellowship** project "DIRECTION: Deep Unfolding Solutions to 6G Communication & Sensing," value: €593,073, role: PI.
- *Sep. 1, 2023 – Aug. 31, 2024:* **Nokia Donation** project "INTEGRATE: Integrated Sensing and Communication with RIS and Machine Learning," value: €50,000, role: PI.
- *Oct. 20, 2022 – Dec. 20, 2023:* **Nokia Foundation's Jorma Ollila Grant** project "DECENT: Deep Unfolding for Energy-Efficient Transceiver Designs in 6G THz Systems," value: €12,000, role: PI.
- *Jan. 1, 2013 – Aug. 31, 2014:* **Samsung Talent Grant**, value: 1-year financial assistance, internship, and an engineering position at Samsung Vietnam Mobile R&D Center, Vietnam.

Contribute to funded research:

- *Sep. 1, 2023 – Aug. 31, 2026:* **CHIST-ERA** project "PASSIONATE," value: €519,000, role: contribute to proposal, project manager, PI: Prof. Markku Juntti.
- *Sep. 1, 2023 – Aug. 31, 2026:* **EU SNS** project "INSTINCT," value: €306,000, role: contribute to proposal, researcher, PI: Prof. Markku Juntti.
- *Jan. 1, 2022 – Dec. 31, 2025:* **Business Finland** project "6GLearn," value: €756,744, role: contribute to proposal, researcher, PI: Prof. Markku Juntti.

RESEARCH OUTPUT

Most important journal papers:

1. **N. T. Nguyen**, V.-D. Nguyen, H. V. Nguyen, H. Q. Ngo, A. L. Swindlehurst, and M. Juntti, "Performance Analysis and Power Allocation for Massive MIMO ISAC," *IEEE Transactions on Signal Processing*, vol. 73, pp. 1691-1707, March 2025. [Online.]
2. **N. T. Nguyen**, L. V. Nguyen, N. Shlezinger, Y. C. Eldar, A. L. Swindlehurst, and M. Juntti, "Joint communications and sensing hybrid beamforming design via deep unfolding," *IEEE Journal of Selected Topics in Signal Processing*, vol. 18, no. 5, pp. 901-916, July 2024. [Online.]

3. **N. T. Nguyen**, V.-D. Nguyen, Q. Wu, A. Tolli, S. Chatzinotas, and M.Juntti, "Fairness enhancement of UAV systems with hybrid active-passive RIS," *IEEE Transactions on Wireless Communications*, vol. 23, no. 5, pp. 2997–3013, Sep. 2023. [Online].
4. **N. T. Nguyen**, M. Ma, O. Lavi, N. Shlezinger, Y. C. Eldar, A. L. Swindlehurst, and M. Juntti, "Deep unfolding hybrid beamforming design for THz massive MIMO systems," *IEEE Transactions on Signal Processing*, vol. 71, pp. 3788–3804, Oct. 2023. [Online]. *(Top reading in IEEE TSP for 3 months.)*
5. **N. T. Nguyen**, N. Shlezinger, Y. C. Eldar, and M. Juntti, "Multiuser MIMO wideband joint communications and sensing system with subcarrier allocation," *IEEE Transactions on Signal Processing*, vol. 71, pp. 2997–3013, Aug. 2023. [Online]. *(Top reading list of IEEE TSP for 4 months, one of the 25* ***most downloaded papers*** *in IEEE SPS (2023–2024), conference version won Best Paper Award at IEEE SSP 2023.)*
6. **N. T. Nguyen**, V.-D. Nguyen, V.-H. Nguyen, H. Q. Ngo, S. Chatzinotas, and M. Juntti, "Spectral efficiency analysis of hybrid relay-RIS-assisted cell-free massive MIMO systems," *IEEE Transaction on Wireless Communication*, vol. 22, no. 5, pp. 3397–3416, Nov. 2022. [Online].
7. **N. T. Nguyen**, Q.-D. Vu, K. Lee, and M. Juntti, "Hybrid relay-reflecting intelligent surface-assisted wireless communications," *IEEE Transactions on Vehicular Technology*, vol. 71, no. 6, pp. 6228–6244, Mar. 2022. [Online]. *(New concept of hybrid active-passive RIS, conference version won Best Paper Award at ATC 2021.)*
8. **N. T. Nguyen**, K. Lee, and H. Dai, "Application of deep learning to sphere decoding for massive MIMO systems," *IEEE Transaction on Wireless Communications*, vol. 20, no. 10, pp. 6787–6803, Oct. 2021. [Online].
9. **N. T. Nguyen** and K. Lee, "Unequally sub-connected architecture for hybrid beamforming in massive MIMO systems," *IEEE Transaction on Wireless Communications*, vol. 19, no. 2, pp. 1127–1140, Feb. 2020. [Online].
10. **N. T. Nguyen** and K. Lee, "Coverage and cell-edge sum-rate analysis of mmWave massive MIMO systems with ORP schemes and MMSE receivers," *IEEE Transactions on Signal Processing*, vol. 66, no. 20, pp. 5349–5363, Oct. 2018. [Online].

Patents/Invention reports:

1. L. Ribeiro, **Nhan. T. Nguyen**, E. M. Taghavi, M. Tayyab, D. Laselva, and M. Juntti, "ENHANCED CSI REPORT FOR EE," *OU25020, 2025.*
2. L. Ribeiro, **Nhan. T. Nguyen**, E. M. Taghavi, M. Tayyab, D. Laselva, and M. Juntti, "METHOD FOR ENHANCED CSI REPORT FOR EE," *OU25024, 2025.*
3. E. M. Taghavi, L. Ribeiro, D. Kumar, M. Tayyab, **Nhan. T. Nguyen**, D. Laselva, and M. Juntti, "CQI TABLE REINTERPRETATION FOR 6G SYSTEMS," *OU25043, 2025.*
4. **N. T. Nguyen** and K.-C. Lee, "MIMO wireless communications system and method using deep neural network based on FS-Net," K.R. Patent Application (1020200118980).
5. **N. T. Nguyen** and K.-C. Lee, "Hybrid analog and digital beamforming apparatus and method," K.R. Patent 10-2277866, July 9, 2021.

RESEARCH SUPERVISION AND LEADERSHIP EXPERIENCE

- **Lead** a research team of **9 Doctoral and 1 Postdoctoral researchers** (supervising: 5, co-supervising: 5), supervised **1 MS thesis and 1 MS summer internship**.
- **Project manager of** *PASSIONATE* – CHIST-ERA joint project with University of Oulu, Charles III University of Madrid, CentraleSupélec - Paris-Saclay University, and University of Luxembourg.
- **Project manager of** *6G-WISECOM* – Business Finland joint project with KAIST, ETRI, and Dankook Univ., Korea.
- **Lead work package 2** in project *6GLearn* – joint work package with VTT Finland (on-going).
- **Led multiple internal/international joint research** (2020 – Present) with partners at Ben-Gurion University, Weizmann Institute of Science, University of California-Irvine, Nokia, University of Luxembourg, Queen's University Belfast, and Shanghai Jiao Tong University.

TEACHING MERITS

- **Invited lecture:** "*Machine Learning for Energy Efficiency Optimization*," Nokia, May 2025.
- **Invited lecture:** "*Model and Data-Driven AI for 6G Signal Processing*," EXACT-6G & EMPOWER-6G School, 2025.
- **Teach advanced MS course** "*Statistical Signal Processing II,*" UOulu, 2021 – present.
- **Teaching demonstration**: "*Machine Learning for MIMO Signal Detection*," UOulu, 2023.
- **Curriculum development**: "*Research-Oriented Signal Processing*" and "*Model-based Learning for Signal Processing in Wireless Communications and Sensing,*" UOulu.

AWARDS AND HORNOURS

- **Ranked first with excellent score (6/6) for research by all four external reviewers** in the open call for a tenure track Assistant Professor position at UOulu, Finland, 2024.
- **Ranked first in selection process for Lecturer position**, University of Liverpool, UK, 2024.
- Top **25 most downloaded paper** in IEEE Signal Processing Society, 2024.
- Won **Research Council of Finland Fellowship**, 2023 *(15% success rate)*.

- Conferred the **Title of Docent** at the UOulu (Signal processing algorithm designs) 2023.
- Co-author **Best Student Paper Award** at IEEE SPWAC 2023. *(The first author is my student)*.
- **Best Paper Award** at IEEE SSP, 2023. *(Novel subcarrier allocation method for ISAC systems.)*
- **Exemplary Reviewer** of IEEE Transactions on Communications (TCOM), 2023.
- **Nokia Foundation Award** by Nokia Finland, 2022. *(One out of five selected ICT proposals.)*
- **Best Paper Award** at ATC, 2021. *(Introduced concept of hybrid relay-RIS for the first time.)*
- **Best PhD Dissertation Award** at Seoul National University of Science and Technology, 2020.
- **Best Master Thesis Award** at Seoul National University of Science and Technology, 2017.
- **Excellence Graduation Award** at Hanoi University of Science and Technology, Vietnam, 2014.
- **Samsung Talent Award** by Samsung Electronics, Vietnam, 2013 – 2014.

OTHER KEY ACADEMIC MERITS

- **PhD Thesis Supervision Committee** of Mr. Hamza Ahmed Qureshi, Univ. of Luxembourg, 2025.
- **Doctoral Thesis Pre-examiner** of Mr. Petteri Pulkkinen, Aalto University, 2025.
- **Funding review** for National Foundation for Science and Technology Dev. (NAFOSTED), Vietnam, 2025.
- **Invited Talk:** "*Model and Data-Driven Approaches for ISAC Design and Optimization*," 6GUESS seminar "6G Technology for Resilient and Intelligent Healthcare," UOulu, May 2025.
- **Invited Talk:** "*Performance Analysis and Beamforming Designs for Massive MIMO JCAS - A Hybrid Approach with Model-Based and Learning Methods,*" IEEE JC&S Symposium, Jan. 2025.
- **Invited Talk:** "*Multiuser MIMO Wideband Joint Communications and Sensing with Subcarrier Allocation*", IEEE Signal Processing Society's Webinar, March 2025.
- **Visiting Talk:** "*Wireless C&S via Model-based and Data-based Methods*", Arizona State University, Dec. 2023.
- **Visiting Talk:** "*Hybrid Approaches for RIS & ISAC Designs*", University of California, Irvine, Oct. 2023.
- **Invited Presentation:** "*Delivered 6G Flagship research results on applications of AI in wireless networking technologies*," 5G Beyond and 6G Workshop, Oulu, Finland, Sep. 2023.
- **Talk** on model-based AI/ML for wireless signal processing in CWC' workshop, Oulu, 2023.
- **Invited Presentation:** "*Model-based AI/ML for THz communications,*" Finland-Japan 3rd Workshop for Future Wireless Communications, Oulu, Finland, Sep. 2022.

SCIENTIFIC AND SOCIAL IMPACT

- **Published 70 papers** with open access on arXiv, IEEE Xplore, and UOulu repository.
- Provide GitHub open source code **open source code** for extension and replication of my papers.
- **Program Chair** of IEEE-RIVF Int. Conf. on Computing and Commun. Tech., 2025.
- **Associate Editor** of IEEE Communications Letters, 2024 – present.
- **Co-organizer and Guest Editor** of IET Communications' special issue "*Next Generation MIMO Technologies for Future Wireless Networks*, 2024"
- **Co-organizer** of special session "Model-based ML/AI for Wireless Communications and Sensing" at IEEE ICASSP *(biggest conference in signal processing)*, 2024.
- **Reviewer** for IEEE journals (TSP, TWC, TCOM, TVT, TAES, TGCN, JSTSP, JSAC, IoT, OJ-COMS), EURASIP journals; IEEE magazines (ComMag, WCM); IEEE letters (COML, WCL, SPL); and conferences/workshops (IEEE ICASSP, Globecom, ICC, SPAWC, VTC, Asilomar, JC&S).
- **Recognized as Exemplary Reviewer** IEEE TCOM, 2023.
- **TPC member** for IEEE Globecom (2021–2025), IEEE ICC, IEEE SPAWC (2021–2024), VTC-Spring 2025.
- **Chaired conference sessions** at IEEE SPAWC 2022, IEEE Asilomar 2024, IEEE ICASSP 2025.