

Thanh Tung Vu

Lecturer in Computer Networking, School of Computer, Data and Mathematical Sciences, Western Sydney University

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Summary

Thanh Tung Vu is a Lecturer in Computer Networking at Western Sydney University and an ARC DECRA Fellow. His research builds energy-efficient, scalable wireless networks that AI can rely on, for 6G and beyond, combining model-based optimisation with machine learning.

Appointments

Lecturer in Computer Networking, School of Computer, Data and Mathematical Sciences, Western Sydney University	2026-present
ARC DECRA Fellow, Australian Research Council	2026-2029
Honorary Research Fellow, Macquarie University, Australia	2025-2026
Postdoctoral Research Fellow, Macquarie University, Australia	2023-2025
Postdoctoral Research Fellow, Linköping University, Sweden	2022-2023
Postdoctoral Research Fellow, Queen's University Belfast, United Kingdom	2021-2022

Education

PhD in Electrical Engineering, The University of Newcastle, Australia	2021
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Funding

Cell-Free Wide-Area mm-Wave Communications ARC DECRA, DE260100816, 2026-2029, lead CI	AU\$529,672
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Contributed projects

Enabling wide area mm-wave broadband networks ARC Discovery Project, DP230102252, key researcher
REsilient INteractive applications through hyper Diversity in Energy Efficient RadioWeaves technology European Union, Horizon 2020, grant 101013425 (REINDEER), contributed as a Postdoctoral Research Fellow
A Dual-frequency Distributed MIMO Approach for Future 6G Applications European Union, Horizon Europe (SNS JU), grant 101096302 (6GTandem), contributed as a Postdoctoral Research Fellow

Selected publications

- [1] Martin Andersson, **Tung T. Vu**, Pål Frenger, Jan Åslund, Erik G. Larsson. **Leveraging Slowly Time-Varying AP-AP Channels for Interference Mitigation in Dynamic TDD**. *IEEE Transactions on Signal Processing*, 2026.
- [2] Chongzheng Hao, **Tung T. Vu**, Hien Q. Ngo, Minh N. Dao, Xiaoyu Dang, Chenghua Wang, Michail Matthaiou. **Joint User Association and Power Control for Cell-Free Massive MIMO**. *IEEE Internet of Things Journal*, 2024.
- [3] Muhammad Farooq, **Tung T. Vu**, Hien Q. Ngo, Le-Nam Tran. **Massive MIMO for Serving Federated Learning and Non-Federated Learning Users**. *IEEE Transactions on Wireless Communications*, 2024.
- [4] Canh T. Dinh, **Tung T. Vu**, Nguyen H. Tran, Minh N. Dao, Hongyu Zhang. **A New Look and Convergence Rate of Federated Multi-Task Learning with Laplacian Regularization**. *IEEE Transactions on Neural Networks and Learning Systems*, 2024.
- [5] Mohammadali Mohammadi, **Tung T. Vu**, Hien Q. Ngo, Michail Matthaiou. **Network-Assisted Full-Duplex Cell-Free Massive MIMO: Spectral and Energy Efficiencies**. *IEEE Journal on Selected Areas in Communications*, 2023.
- [6] **Tung T. Vu**, Hien Q. Ngo, Minh N. Dao, Duy T. Ngo, Erik G. Larsson, Tho Le-Ngoc. **Energy-Efficient Massive MIMO for Federated Learning: Transmission Designs and Resource Allocations**. *IEEE Open Journal of the Communications Society*, 2022.
- [7] **Tung T. Vu**, Duy T. Ngo, Hien Q. Ngo, Minh N. Dao, Nguyen H. Tran, Richard H. Middleton. **Joint Resource Allocation to Minimize Execution Time of Federated Learning in Cell-Free Massive MIMO**. *IEEE Internet of Things Journal*, 2022.

- [8] **Tung T. Vu**, Duy T. Ngo, Nguyen H. Tran, Hien Q. Ngo, Minh N. Dao, Richard H. Middleton. **Cell-Free Massive MIMO for Wireless Federated Learning**. *IEEE Transactions on Wireless Communications*, 2020. *Top Accessed Article, IEEE TWC 2020*.
- [9] **Tung T. Vu**, Duy T. Ngo, Minh N. Dao, Salman Durrani, Duy H. N. Nguyen, Richard H. Middleton. **Energy Efficiency Maximization for Downlink Cloud Radio Access Networks With Data Sharing and Data Compression**. *IEEE Transactions on Wireless Communications*, 2018.
- [10] **Tung T. Vu**, Duy T. Ngo, Minh N. Dao, Salman Durrani, Richard H. Middleton. **Spectral and Energy Efficiency Maximization for Content-Centric C-RANs with Edge Caching**. *IEEE Transactions on Communications*, 2018.

Full list at www.thanhtungvu.com/publications: 22 journal articles, 20 conference papers, 1 book chapter, 2 patent applications.

Patent applications

- [P1] Pål Frenger, **Tung T. Vu**, Erik G. Larsson, Martin B. Andersson. **Symbol Detection in the Presence of Access Point-to-Access Point Interference**. *PCT application, published as WO 2025/052272 A1*, 2025 (pending).
- [P2] Pål Frenger, **Tung T. Vu**, Erik G. Larsson, Martin B. Andersson. **User-to-User Interference Mitigation**. *PCT application, published as WO 2025/052272 A1*, 2025 (pending).

Talks

- Seminar: **Towards 6G and Beyond for a Connected and Intelligent World**. CSIT October Seminar, Western Sydney University, Sydney, Australia, October 2026.
- Invited talk: **Interference management for dynamic full-duplex cell-free networks**. The 21st Australian Communications Theory Workshop (AusCTW 2024), Melbourne, Australia, February 2024.
- Lecture: **Fundamentals of MIMO Communications**. Ho Chi Minh City University of Science, Ho Chi Minh City, Vietnam, November 2022.

Service

Editorial: Editor, Elsevier Physical Communication (PHYCOM), 2021-2025.

Technical program committees: IEEE GLOBECOM (2024, 2023, 2021); IEEE ATC (2024); IEEE MeditCom (2024); IEEE ISEE (2023).

Chairs: Track Chair, IEEE International Conference in Advanced Technologies for Communications (ATC), 2023; Track Chair, IEEE International Conference on Communications and Electronics (ICCE), 2022; Session Chair, IEEE Region 10 Conference (TENCON), 2020.

Reviewer for journals: IEEE Journal on Selected Areas in Communications; IEEE Transactions on Communications; IEEE Transactions on Wireless Communications; IEEE Internet of Things Journal; IEEE Transactions on Vehicular Technology; IEEE Communications Letters; IEEE Wireless Communications Letters; IEEE Systems Journal; IEEE Access; Wiley Transactions on Emerging Telecommunications Technologies; IEEE Transactions on Fundamentals of Electronics, Communications and Computer Sciences; IEEE Transactions on Communications.

Reviewer for conferences: IEEE International Conference on Communications (ICC); IEEE Global Communications Conference (GLOBECOM); IEEE Wireless Communications and Networking Conference (WCNC); IEEE Vehicular Technology Conference (VTC); IEEE International Conference in Advanced Technologies for Communications (ATC); IEEE International Conference in Communications, Management and Telecommunications (ComManTel); National Foundation for Science and Technology Development Conference on Information and Computer Science (NICS).

Recognition: Exemplary Reviewer, IEEE Transactions on Communications, 2021; Exemplary Reviewer, IEEE Wireless Communications Letters, 2020 and 2021.

Teaching

- **Course Instructor**, Linköping University, Sweden 2023
TSKS14 Multiple-antenna Communications (for Master's and PhD students).
- **Applied Math Tutor**, School of Mathematics and Physics, Queen's University Belfast 2021-2022
- **Course Developer and Teaching Assistant**, The University of Newcastle, Australia 2020
ELEC3540 Analog and Digital Communications.
- **Course Instructor**, Ho Chi Minh City University of Science, Vietnam 2012-2013
ETC10301 Digital Communication Systems (2 semesters); ETC10014 Digital Signal Processing (2 semesters); ETC10311 Matlab and Simulation of Communication Systems.