



MESFIN LERANSO BETALO, Ph.D.

Postdoctoral Researcher | Wireless Networks | UAV Systems | 6G | AI for IoT

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PROFESSIONAL SUMMARY

Postdoctoral researcher specializing in UAV-assisted wireless networks, 6G communication systems, AI-driven optimization, and IoT. Author of multiple high-impact IEEE journal publications, experienced in international collaboration, project leadership, student supervision, and competitive grant development.

RESEARCH INTERESTS

6G Networks, UAV Swarm Systems, Resource Allocation, Intelligent Transportation Systems, IoT, Edge AI, Multi-Agent Reinforcement Learning, Digital Twins, Wireless Communications.

EDUCATION

- Ph.D., Information and Communication Engineering – UESTC, China (2018–2024)
- M.Sc., Information Technology – University of Madras, India (2014–2016)
- B.Sc., Computer Science – Hawassa University, Ethiopia (2008–2012)

PROFESSIONAL EXPERIENCE

- Postdoctoral Researcher – Shenzhen University (2024–Present)
- Senior Lecturer – Wachemo University (2018–2022)
- Network Administrator – Wolaita Sodo University (2013–2018)
- Instructor – Boditi Industrial and Construction College (2012–2013)

PROFESSIONAL SERVICES & REVIEWER ROLES

- Reviewer for IEEE Transactions on Network and Service Management, IEEE Transactions on Vehicular Technology, IEEE Internet of Things Journal, IEEE Transactions on Mobile Computing, IEEE Transactions on Intelligent Transportation Systems. Completed over **50 peer reviews** for journals and funding agencies.

GRANTS & FUNDED PROJECTS

- National Natural Science Foundation of China (62373255, 62171104)
- National Key R&D Program of China (2018YFE0117500)
- Shenzhen Natural Science Fund (20220809175803001)
- Guangdong Natural Science Foundation (2024A1515011204)
- Open Fund of National Engineering Laboratory for Big Data System Computing Technology (SZU-BDSC-OF2024-15)

SELECTED JOURNAL PUBLICATIONS

A. JOURNAL ARTICLES

- [1] **M. L. Betalo**, Z. Wu, J. Li, X. Bai, W. Zhang, and S. S. Ge, "RIS-Assisted UAV-Based Dynamic Coverage Control for 6G-Enabled Internet of Everything Using Multi-Agent DRL," *IEEE Transactions on Automation Science and Engineering*, Early Access, 2024.
- [2] **M. L. Betalo**, I. Ullah, F. B. Tesema, Z. Wu, J. Li, and X. Bai, "Generative AI-Driven Multi-Agent DRL for Task Allocation in UAV-Assisted EMPD within 6G-Enabled SAGIN Networks," *IEEE Internet of Things Journal*, Early Access, 2024.
- [3] **M. L. Betalo**, S. Leng, A. M. Seid, H. N. Abishu, and X. Bai, "Dynamic Charging and Path Planning for UAV-Powered Rechargeable Wireless Sensor Networks Using Multi-Agent DRL," *IEEE Transactions on Automation Science and Engineering*, 2024.
- [4] **M. L. Betalo**, A. M. Seid, H. N. Abishu, S. Leng, M. Fakirah, A. Erbad, and M. Guizani, "Multi-Agent DRL-Based Energy Harvesting for Freshness of Data in UAV-Assisted Wireless Sensor Networks," *IEEE Transactions on Network and Service Management*, 2024.
- [5] **M. L. Betalo**, S. Leng, H. N. Abishu, F. A. Dharejo, A. M. Seid, A. Erbad, R. A. Naqvi, and M. Guizani, "Multi-Agent Deep Reinforcement Learning-Based Task Scheduling and Resource Sharing for O-RAN-Empowered Multi-UAV-Assisted Wireless Sensor Networks," *IEEE Transactions on Vehicular Technology*
- [6] F. Wayesa, **M. Leranso**, G. Asefa, and A. Kedir, "Pattern-Based Hybrid Book Recommendation System Using Semantic Relationships," *Scientific Reports*,
- [7] I. Ullah, H. Bilal, A. Sharafian, **M. L. Betalo**, S. A. Samy, and X. Bai, "The Internet of Nature Things: A New Frontier in Environmental Monitoring and Sustainable Ecosystem Management," *IEEE Internet of Things Journal*.
- [8] E. Bekele, T. Beshah, and **M. Leranso**, "Bidirectional English to Wolaytta Machine Translation Using Hybrid Approach," *International Journal of Soft Computing and Engineering*, 2023.

B. CONFERENCE PROCEEDINGS

- [9] **M. L. Betalo**, S. Leng, L. Zhou, and M. Fakirah, "Multi-UAV Data Collection and Trajectory Planning in Wireless Sensor Networks," in *Proc. IEEE Int. Conf. Computer Communication and Artificial Intelligence (CCAI)*, Beijing, China, May 2022.
- [10] **M. L. Betalo**, S. Leng, X. Chen, and L. Zhou, "Joint Optimization for Cluster Head Selection in UAV-Assisted Wireless Sensor Networks," in *Proc. Int. Conf. UK-China Emerging Technologies (UCET)*, 2021.
- [11] M. Fakirah, S. Leng, M. A. Mohammad, and **M. L. Betalo**, "Improving User Data Rate Performance for Hybrid RF/VLC Outdoor Vehicular Communications," in *Proc. IEEE Int. Conf. Electronics Technology (ICET)*, 2023.

[12] M. Fakirah, S. Leng, M. A. Mohammad, and **M. L. Betalo**, “Improving User Data Rate Performance for Hybrid RF/VLC Outdoor Vehicular Communications,” in Proc. IEEE Int. Conf. Communication Technology (ICCT), 2022.

C. **UNDER-REVIEW MANUSCRIPTS**

[13] **M. L. Betalo** and X. Bai, “Enhancing Data Transmission Rates in Hybrid VLC/RF Communications for Roundabouts Traffic Management Using Multi-Agent DRL,” under review, IEEE Transactions on Network and Service Management.

[14] **M. L. Betalo** and X. Bai, “Energy-Efficient and Fair Resource Scheduling in UAV-Assisted ITS via Meta-Learning-Based Multi-Agent Reinforcement Learning,” under review, IEEE Transactions on Mobile Computing.

[15] **M. L. Betalo** and X. Bai, “GAN-Enhanced Incremental Federated Learning for Joint Traffic Prediction and UAV Trajectory Optimization in 6G-Enabled VEC Systems,” under review, Information Processing and Management.

AWARDS

- Best Session Speaker – National Research Conference
- Best ICT Supervisor – Ethiopian National Election Board
- Best Sports Award – UESTC

TRAINING & CERTIFICATIONS

UAV Flight Control | Wireless Network Administration | Computer Maintenance

TECHNICAL SKILLS

Python, MATLAB, C++, TensorFlow, PyTorch, NS-3, OMNeT++, SQL, Git, Docker, LaTeX

LANGUAGES

English (Fluent), Amharic (Native), Wolaita (Native)

REFERENCES

1. Prof. Xiaoshan Bai - Current Associate Professor at Shenzhen University and our Research Supervisor. **Email:** baixiaoshan@szu.edu.cn
2. Prof. Supeng Leng – Professor of information and communication engineering at UESTC and the Party Committee Secretary of the same School, **Email:** spleng@uestc.edu.cn
3. Dr. Yishak Gecho – Associate Professor at Wolaita Sodo University, **Email:** yishakgecho@gmail.com
4. Dr. Fiseha Berhanu Tesema – Assistant professor at University of Nottingham Ningbo China, **Email:** Fiseha-Berhanu.Tesema@nottingham.edu.cn
5. Dr. Amin Sharafian – Associate Professor at Nanfang College of Sun Yat-Sen University, **Email:** sharafianardakaniamin@nfu.edu.cn