Dr. Li is an independent researcher with vibrant international collaborations and extensive experience in artificial intelligence (AI)-native non-terrestrial communications (NTC), (scalable/multi-agent) deep reinforcement learning (DRL)-empowered radio and computing resource management for multi-access edge computing (MEC), (quantum) machine learning (ML)-aided and/or compressive sensing (CS)-enabled channel estimation for ultra-massive MIMO (UM-MIMO) Terahertz (THz) communication systems, physical layer security, and covert communications [1, 2, 3, 4, 5, 6, 7, 8, 9, 1, 10, 3, 2, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21]. Dr. Li has published a number of top-tier journal [7, 1, 2] and flagship conference [6, 8, 10, 3] papers regarding quantum computing and/or (multi-agent) DRL for aiding in intelligent decision making for future wireless communications, e.g., UAV-aided transmission networks and multi-access edge computing, who is now actively doing research in this interdisciplinary research area of quantum machine learning for next-generation wireless networks. Throughout his PhD at King's College London, Dr. Li designed some of the first quantum-aided DRL algorithms [1, 2, 3] for drone-assisted wireless networks, reimagining conventional DRL frameworks with quantum mechanics enhancements. In his prior works [1, 2, 3], Dr. Li proposed some trailblazing quantum-inspired DRL frameworks for aiding training performance of conventional DRL algorithms, e.g., deep Q network (DQN) and its variants, to achieve seamless wireless transmissions, from perspectives of intelligent agents' action selection policy and experience replay strategy. In specific, Dr. Li initiated novel probabilistic action selection policy and new reinforcement strategy for RL agents, which are inspired by the collapse phenomenon and amplitude amplification in quantum mechanics, respectively. Furthermore, to help the DRL agent commit a better trade-off between sampling priority and diversity, Dr. Li proposed a promising quantum-inspired experience replay (QiER) framework, by linking the experienced transition's temporal difference (TD) error with the paired quantum bit (qubit) and adopting Grover iteration-based quantum amplitude manipulation. His expertise extends to Bayesian learning [4], federated learning, and multi-agent DRL [5, 6]. When he was doing his Research Fellow role at Nanyang Technological University, Dr. Li focused on proposing CS-aided and/or (quantum) ML-enabled channel estimation algorithms for UM-MIMO THz transmission systems, where channel sparsity and near-field radiation characteristic are considered [4]. Beyond (quantum) ML-aided performance optimization, Dr. Li is also an expert in designing security- and covertness-aware wireless transmission protocols [9, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21]. He has performed in-depth performance analyses for various wireless transmission protocols, deriving closed-form expressions of various key metrics and/or their upper/lower bounds, evaluating the impact of design parameters on wireless transmission performance, and revealing inherent and fundamental trade-offs among system parameters for guiding wireless system design.

Dr. Li has a unique expertise that spans DRL, wireless systems, and quantum-aided ML with an impressive record of over 20 publications in these areas [1, 2, 3, 4, 5, 6, 7, 8, 9, 1, 10, 3, 2, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21], most of which appeared in top-tier venues such as the IEEE Transactions on Wireless Communications and the IEEE International Conference on Communications. Dr. Li's excellent track record equips him to design, analyze, and optimize quantum-enhanced intelligent 6G wireless systems, pioneering a first-of-its-kind interdisciplinary research area involving quantum computing, ML, and wireless communications.

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