# Graph state generation for quantum networks

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## Abstract

The building blocks of quantum networks are quantum repeaters, where photonic quantum information carriers are generated and error corrected through interactions with matter qubits. I will describe two paradigms of quantum repeaters and discuss in each case how careful control of a register of spin qubits can increase the entanglement distribution rate over the network. Specifically, I will describe our recent work on the accurate and fast control of nuclear spin memory qubits coupled to spin defects. I will also discuss the deterministic generation of photonic 'graph' states from such quantum emitters.