



Superconducting circuits is one of the leading contenders in the race toward practical Quantum computing. The ambition of the project is to exploit the specific features of High-Impedance Superconducting Qubit (HISQ) to outperform the conventional approach based on low-impedance circuits. High-impedance circuits can exhibit record coherence times and their large anharmonicity enable quantum gate operations inspired from atomic systems that have no counterpart in weakly anharmonic systems. In this project, I will study HISQ and exploit their built-in robustness to demonstrate high-coherence times and to push back the limit on the fidelity of Quantum operations.

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