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Majorana qubits

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Qubit is the building blocks for quantum computers. The qubit hardware needs to be as robust as possible in order to allow scaling towards circuits with many qubits. We investigate Majorana qubits where information is stored non-locally and therefore protected against basic decoherence mechanisms. We use semiconductor nanowires proximitized by superconductors as the material for realizing Majorana zero modes. Nanowire networks are needed in order to manipulate the Majoranas as qubits and perform qubit operations. We will report on the Majorana qubit progress at Microsoft.

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