Quantum Computing Notes

Luca Cavallini

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1 Fundamentals

2 Gates

2.1 Identity gate

$$I = \begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix} \tag{1}$$

2.2 Hadamard gate

$$H = \frac{1}{\sqrt{2}} \begin{bmatrix} 1 & 1 \\ 1 & -1 \end{bmatrix} \tag{2}$$

$$|0\rangle \mapsto \frac{|0\rangle + |1\rangle}{\sqrt{2}}, |1\rangle \mapsto \frac{|0\rangle - |1\rangle}{\sqrt{2}} \tag{3}$$