



This certifies that

**Karim Elgammal**

has successfully completed Qubit by Qubit's 2020-2021  
**Introduction to Quantum Computing Course**

sponsored by IBM Quantum

This course took place from October 2020 to May 2021. Students developed a foundational understanding of quantum computing, with topics including introductory linear algebra, coding with Qiskit, quantum mechanics, quantum algorithms, and quantum applications.



**IBM Quantum**

A handwritten signature in black ink, reading 'Elizabeth Durst'.

Liz Durst  
Director, IBM Quantum & Qiskit  
Community

A handwritten signature in black ink, reading 'Kiera Peltz'.

Kiera Peltz  
Executive Director, Qubit by Qubit  
Founder, The Coding School