

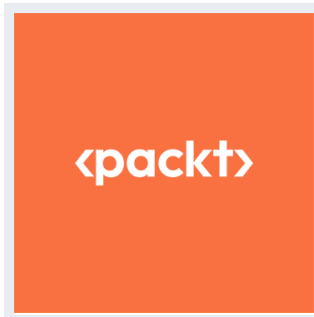


3 Courses

Mathematical Foundations  
and Quantum Mechanics  
Essentials

Python Programming for  
Quantum Computing

Quantum Computing with  
Qiskit and Advanced  
Algorithms



Jun 20, 2025

**Al Rey Villagracia**

has successfully completed the online, non-credit Specialization

# The Complete Quantum Computing Course for Beginners

Congratulations on completing The Complete Quantum Computing Course for Beginners! Throughout this course, you've developed a strong foundation in key mathematical concepts like complex numbers, matrix operations, and linear transformations, enabling you to understand the core differences between classical and quantum computing. You've also gained practical skills in Python programming and worked extensively with Qiskit to build circuits and run them on simulators and real quantum hardware. By mastering famous quantum algorithms such as Bernstein-Vazirani, Grover's, and Shor's, you've acquired both theoretical and hands-on expertise in quantum computing.

The online specialization named in this certificate may draw on material from courses taught on-campus, but the included courses are not equivalent to on-campus courses. Participation in this online specialization does not constitute enrollment at this university. This certificate does not confer a University grade, course credit or degree, and it does not verify the identity of the learner.

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