Verified Certificate

Romeo Kienzler Chief Data Scientist

IBM

This is to certify that

Miguel Ángel Barrera Arias

successfully completed and received a passing grade in

BD0231EN: Apache Spark for Data Engineering and Machine Learning

a course of study offered by IBM, an online learning initiative of IBM.

Karthik Muthuraman

Software Engineer (Machine Learning)

IBM

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Issued noviembre 12, 2021

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