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Ryan C Arredondo

has successfully completed

Data Manipulation at Scale: Systems and Algorithms

a MOOC from the University of Washington and offered through Coursera

A handwritten signature in black ink, appearing to read 'Bill Howe', positioned above a horizontal dotted line.

Bill Howe, Ph.D
Associate Director
eScience Institute
Affiliate Assistant Professor
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**COURSE
CERTIFICATE**



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Coursera has confirmed the identity of this individual and
their participation in the course.