

Dear Readers

In 2009, Turing award winner Jim Gray spoke of data science as a fourth paradigm of science (empirical, theoretical, computational and data-driven) arising from and capitalizing on the huge amount of data that is now available for investigation. The confluence of the availability of data and increasing sophisticated tools, processes, and algorithms for analyzing and drawing knowledge and insight from data has impacted every area of scientific engagement. It has also opened up exciting new opportunities for interdisciplinary work across the many fields including (but certainly not limited to) computer science, mathematics, statistics, and information science from which it draws foundational knowledge.

For computer science, the emergence of data science offers both tremendous opportunity and something of a conundrum, as once again the emergence of a new and closely related computing practice or field raises inevitable questions about whether and how it fits into current post-secondary computer science curricula.

This document represents an effort by the ACM Education Board through the work of the Data Science Task Force to answer this question. It is an effort to put our own data science house in order. This document is not, however, an effort to claim ownership or even primacy in data science. To do so would be to negate the powerful interdisciplinarity that data science makes possible.

It is our hope that this document will represent a productive step in a conversation that engages all relevant fields and disciplines. Toward this end, the ACM Education Board wishes to express our willingness and excitement about participating in future, more expansive and inclusive conversations regarding the promise and practice of data science.

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