

NSF Meta-Workshop: AI to Accelerate Science and Engineering Discover (AI2ASED)

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From Harnessing the Data Revolution to Harvesting the Data Revolution

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Developments in modern computation and instrumentation have led to the possibility of recording enormous amounts of data, the data revolution. Along with this incredible data flow, a new demand has emerged for algorithms that can run on all this data to “Harness the Data Revolution.” Large datasets are rapidly encompassing many scientific domains, including high-energy physics, Astronomy, Neuroscience, Genomics, Materials Science, Biology, Climate science, Materials science, among others. The use of parallel processing strategies, coupled with deep learning, placed within modern cyberinfrastructure has emerged as a solution to handle the data revolution. However, new developments in AI algorithms and an educated workforce are needed to achieve state-of-the-art algorithms. This talk presents a list of emerging solutions and strategies towards algorithms and approaches that allow us to handle this data. Ultimately we can go from harnessing the data revolution to harvesting the data revolution.

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