

UM Flagship Constellation

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DRAFT*

Big Data

Grand Challenge:

Effectively harness and systematically analyze large amounts of data from disparate sources for a wide variety of purposes

Description:

Big data has the capability to expand our understanding of the world, maximize our resources, and create positive societal impacts by rapidly advancing solutions to global problems.

The science of big data can be categorized into the areas of algorithm development, data analytics and intelligence, data security, virtual reality, simulation, and visualization. Big data can be applied to areas affecting many corners of society, such as precision medicine and population health, science and engineering, strategic communications, security, business, intelligence, finance, education and pedagogy, digital humanities, law, politics, and public policy, to name a few.

Foundations:

- Advance the science of big data (gather, secure/store, transfer, analyze, and visualize data)
- Advance the application of big data (analyze and interpret big data to enable better/smarter decisions and lasting solutions)