Scientific Data Analysis:

authentic information & intelligence (AI^2)

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at

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Abstract:

- Scientific Data Analysis (SDA) is developed to extract and present explicitly visible and explainable ***authentic information and intelligence (AI^2)*** embracing data-curator's domain knowledge and its complex system's multiscale dynamics. AI^2 is revealed through block-sustained heatmaps framed by a Tree-topological space of study subjects coupled with annotated statuses on row-axis, and a Tree-geometry of major feature-categories of possibly of high order interactions on column-axis. This heatmap as a bipartite network matrix is built by collecting and arranging memberships of each computed major feature-category into its binary column-vector, which is in a form of 1D histogram selected via finite sample precision motivated by Kolmogorov's randomness-proper concept. Thus, each binary row-vector naturally becomes a subject's individual character-landscape. As such, AI^2 can be clearly viewed and seen through horizontal and vertical block-chains that are readable by human and ChatGPT. We hope SDA and AI^2 could help all scientists on campus and in industry, who want to build a truth-based new world and beyond. We illustrate SDA and resultant AI^2 via a series of illustrative data with increasing complexity.

- ***Note:*** ***No statistics: knowledge or background, is needed. You will enjoy this talk if you come with willingness and curiosity to explore data.***