

## VISUALIZING MULTIVARIATE DATA USING SINGULARITY THEORY

PROF. OSAMU SAEKI

In this talk, recent developments in visualization of large data, especially that of multivariate volume data, will be presented, focusing on two ingredients. One is the mathematical background, especially the singularity theory of differentiable mappings, which enables us to capture topological features of given multivariate data in a rigorous way. The other is a new development in computer science, called the joint contour net, which can encode topological structures of a given set of multivariate data in an efficient and robust way. Some applications to real data analysis are also presented.

This is a joint work with Shigeo Takahashi, Daisuke Sakurai, Hsiang-Yun Wu, Keisuke Kikuchi (The University of Tokyo), Hamish Carr, David Duke (University of Leeds), and Takahiro Yamamoto (Kyushu Sangyo University).

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