1. Title

2. Abstract

3. Short bio of you

**Title**

From data to decisions, a mixed path of data visualization and machine learning

**Abstract**

We can treat data visualization and machine learning as different paths from data to decisions by understanding patterns in the data. Ideally, machine learning has no human intervention, and data visualization is all about human interaction and perception. But in practice, they can not be totally separated from each other. When we use data visualization, we can still benefit from the automation of certain steps. When we use machine learning, human intervention is actually inevitable.

This talk first discusses how data visualization can assist in steps of a machine learning pipeline where human interventions are needed, including model development, model evaluation, and model application. This talk then extends an existing visualization model and introduces how the needs in visualizations can be fulfilled by employing machine learning techniques. Six key visualization processes where the employment of ML techniques can benefit visualizations are identified. The six processes are mapped into main machine learning tasks to align the capabilities of machine learning with the needs in visualization. This talk ends with a discussion about how to better combine data visualization and machine learning methods based on the analysis context (i.e., the type of tasks and the amount of information).

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