Machine learning model performance visualization

Confusion matrices are a very common visualization of the performance of a machine learning model. Compared to an accuracy or F_1 score, it tells us much more about the type of mistakes the model makes. However, confusion matrices are confusing. In spite of its ubiquity, novices and experts alike make mistakes in telling apart the true's from the positives, and false's from the negatives.



In this project, your task is to systematically evaluate the alternative methods of visualizing the performance of a machine learning model. What are the most important pieces of information in a confusion matrix? What different ways exist to convey this information? What are the benefits of one technique over the other? Next, we challenge you to design your own visualization of model performance that is clearer and more insightful than a confusion matrix (for a specific use case). Interaction should play a key role in your design.

Relevant paper: [PDF] ieee.org (Squares: Supporting Interactive Performance Analysis for Multiclass Classifiers) [PDF] acm.org (Modeltracker: Redesigning performance analysis tools for machine learning)