Tetrahedron: Barycentric Measure Visualizer

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Motivation

- Numerous measures available for classifier evaluation and rule interestingness
- What are the differences between these measures?
- What are the properties of each measure (min, max, monotonicity, symmetry)?
- How to select the 'best' measure for a given task?

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<thead>
<tr>
<th>Actual</th>
<th>Predicted</th>
<th>Positive</th>
<th>Negative</th>
<th>total</th>
</tr>
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<tbody>
<tr>
<td>Positive</td>
<td>TP</td>
<td>FN</td>
<td>P</td>
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<td>Negative</td>
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<td>total</td>
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Barycentric Visualization

- In the barycentric coordinate system each confusion matrix is represented as a point of a 3D tetrahedron
- The value of a measure based on the depicted four values may be rendered as color

- Visual comparison of measures
- Visual detection of properties
- Insight into full range of measure's domain
- Consecutive cross-sections (cutting planes) depict measure behavior in changing class or prediction proportions

Measure Visualizer

Interactive 3D WebGL visualization

Cross-sections for various imbalance ratios

Parameter animations

Support for user-defined formulas

Try the demo

Get the code

https://dabrze.shinyapps.io/Tetrahedron/
https://github.com/dabrze/Tetrahedron/