

# Evaluating Performance of a network

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Review of the paper [1].

## 1 Goemetric

- Classification accuracy

$$Sensitivity = \frac{TP}{TP + FN}$$

- Overlap Based [2]

$$Dice\ Similarity\ Coefficient = \frac{2TP}{2TP + FP + FN} = \frac{2|S_g^1 \cap S_t^1|}{|S_g^1| + |S_t^1|}$$

- Volume Based

$$Volume\ A \div Volume\ B$$

- Surface Based

$$Hausdorff\ distance = \max(h(A, B), h(B, a)), h(A, B) = \max_{a \in A} \min_{b \in B} ||a - b||$$

- Moment Based - distance from centre in x y and z dimensions
- Measures of estimated editing - Surface Dice

## 2 Dosimetric

## 3 Time-Based

## 4 Qualitative

## References

- [1] K. Mackay et al. *A Review of the Metrics Used to Assess Auto-Contouring Systems in Radiotherapy*. 2023. URL: [https://www.clinicaloncologyonline.net/action/showPdf?pii=S0936-6555\(23\)00021-3](https://www.clinicaloncologyonline.net/action/showPdf?pii=S0936-6555(23)00021-3).
- [2] Abdel Aziz Taha and Allan Hanbury. "Metrics for evaluating 3D medical image segmentation: analysis, selection, and tool". In: (2015). URL: <https://ncbi.nlm.nih.gov/pmc/articles/PMC4533825/>.