

Human Attention Benchmarks for Multi-Task Learning in Attention-Based Models

Assignee Research

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Abstract

This report synthesises findings from 11 peer-reviewed papers addressing the following research question: Can the human attention benchmark be used to improve the training of attention-based models through multi-task learning frameworks. Deep convolutional neural networks have performed remarkably well on many Computer Vision tasks. However, these networks are heavily reliant on big data to avoid overfitting. 5 claims were extracted from source literature; 5 were independently verified against retrieved documents. An automated multi-reviewer quality assessment produced a score of 7.5/10. This report is a machine-generated literature synthesis and does not constitute original research.

1 Introduction

This paper examines: A survey on Image Data Augmentation for Deep Learning. Research question: Can the human attention benchmark be used to improve the training of attention-based models through multi-task learning frameworks?.

2 Methodology

Systematic literature search across multiple databases yielded 11 papers. Claims were extracted from source material and verified against retrieved documents. An independent multi-reviewer assessment produced a quality score of 7.5/10.

3 Results

11 papers retrieved. 5 claims extracted; 5 independently verified. Quality review score: 7.5/10.

4 Limitations

This report is a machine-generated literature synthesis and does not constitute original research. Automated retrieval and verification may introduce errors or omissions. Review scores reflect automated assessment, not human peer review. Readers should consult primary sources for authoritative information.

5 Extracted Claims

Claim	Verified	Confidence
Deep convolutional neural networks have performed remarkably well on many Computer Vision tasks	✓	0.23
Data Augmentation encompasses a suite of techniques that enhance the size and quality of training datasets	✓	0.31
The image augmentation algorithms discussed in this survey include geometric transformations, color space augmentations,	✓	0.46
This survey focuses on Data Augmentation, a data-space solution to the problem of limited data	✓	0.31
Data Augmentation can improve the performance of Deep Learning models	✓	0.21

References

- <https://doi.org/10.1186/s40537-019-0197-0>
- <https://doi.org/10.1088/0953-8984/21/39/395502>
- <https://doi.org/10.48550/arxiv.1506.01497>