

# TEMPLATE OF PAPERS FOR OfficeLibre: ICCAITD 2025

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**Abstract:**In image recognition using deep learning in artificial intelligence, target learning images were collected by class and learning was performed. Deep learning is thought to be able to perform advanced object recognition by performing subsampling called convolution operations and pooling. However, accuracy after learning is not easily 100%, and a method to automatically improve accuracy for various issues was required. In this paper, we introduce a special function into the learning loop and improve the recognition accuracy by interfering with the convolution operation. We developed two types of special functions(A,B) and conducted experiments, including adjusting the control parameters of the neural network error backpropagation. When performing 4-8 class recognition for five types of objects (vehicles, animals, plants, buildings, parts), an average recognition accuracy improvement of 2.1% was obtained when one function A was used.(50words-350words)

**Keywords:** Image Processing, Deep Learning, Special Function, Control, Class, Category

## 1. INTRODUCTION

This document is provided for the instructions for ICCAITD 2025 which is the second conference following from ICCAITD 2024.

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Figure captions are placed below figures, and table captions are placed above tables. It is essential that all illustrations are clear and legible. Vector graphics (rather than rasterized images) should be used for diagrams and schemas whenever possible. You can convert rasterized simple images with lines or shapes into vector format images.

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### Evaluation criteria:

The emphasis is on how new the paper is compared to existing knowledge (common sense), in other words, on its originality (uniqueness).

There is no set structure for a paper. There are classifications into hypothesis verification and hypothesis generation, and into theoretical research, empirical research, applied research, and institutional research. There is also a genre called review paper. All papers must have the above originality. Therefore, it seems that hypothesis verification, theoretical research, and applied research tend to have clear points of originality. In hypothesis generation, it may be necessary to convince the reader of the originality by discussing the details of similar papers. Review papers often lack originality, and there may be value in summaries and opinions based on the knowledge of experienced authors. Therefore, simply collecting and classifying papers may not be enough to find the value of the paper.

others

Table 1. Accuracy and loss after training.

Input	Accuracy	Loss
Real images	0.95	0.12
Generated images	0.97	0.09
Mixed images	0.96	0.11

Table 2. Margin Specifications.

Margins	A4 Paper
Top	20 mm (0.79 in)
Bottom	20 mm (0.79 in)
Left	20 mm (0.79 in)
Right	20 mm (0.79 in)

### 3. Proposed Method

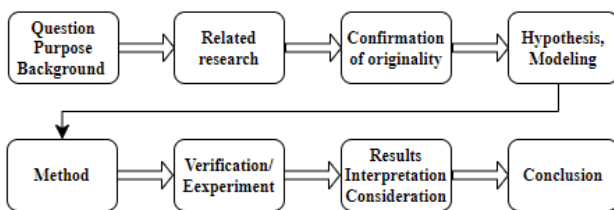


Fig.1. Blockdiagram of paper structure (png).

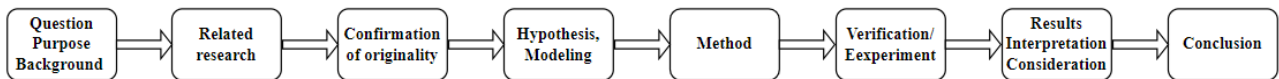


Fig.2. Blockdiagram of paper structure (long-sized).

## 4. Experiments

## 5. Interpretation and Considerations

## 6. Conclusions

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