Semantic Segmentation with Deep Learning for Microstructural Characterization and Analysis

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# Abstract(15 points)*.*

Brief summary of the project objectives, methodology, findings, and conclusions.

# Introduction

Background Information: Provide context for the project and its relevance in the field of computer vision.

Objectives: Clearly state the goals and objectives of the project.

Scope: Define the scope of the project and any limitations.

# Literature review(20 points)

Review of Related Work: Summarize relevant literature and existing research related to your project.

Identification of Gaps: Discuss any gaps or shortcomings in the existing literature that your project aims to address.

# Methodology(50 points)

Data Collection: Describe the datasets used in the project and how they were obtained.

Preprocessing: Outline any preprocessing steps applied to the data (e.g., normalization, augmentation).

Model Architecture: Explain the architecture of any models used in the project (e.g., Convolutional Neural Networks).

Training Procedure: Detail the training process, including hyperparameters and optimization techniques.

# Results(45 points)

Quantitative Results: Present numerical results, such as accuracy, precision, recall, etc.

Qualitative Results: Include visualizations or examples to illustrate the performance of the model.

Comparison: Compare your results with existing approaches or benchmarks if applicable.

1. **Conclusion(20 points)**

Summary: Recapitulate the main findings and their significance.

Contributions: Highlight the contributions of the project to the field of computer vision.

# References(10 points)

List all the references cited in the report following a consistent citation style (e.g., APA, IEEE).