# Anchor-based Plain Net for Mobile Image Super-Resolution

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**Anchor-based Plain Net for Mobile Image Super-Resolution**  
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A project report submitted in partial fulfilment of the requirements for course CS7GV1 computer vision)

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# Abstract

Summary of this report.

# Introduction

Intro.

# Related work (Literature review)

Summary of the paper that this report is based on.

# Proposed work

Summary of implementation and additional improvements if any.

# Experimental Discussion

In-depth description of work done.

# Ablation Study Application of the Proposed Method

From Stack Exchange:

*"In the context of machine learning, and especially complex deep neural networks, ‘ablation study’ has been adopted to describe a procedure where certain parts of the network are removed, to gain a better understanding of the network’s behaviour.*

*The term has received attention since a tweet by Francois Chollet, primary author of the Keras deep learning framework, in June 2018:*

*‘Ablation studies are crucial for deep learning research -- can't stress this enough. Understanding causality in your system is the most straightforward way to generate reliable knowledge (the goal of any research). And ablation is a very low-effort way to look into causality.*

*If you take any complicated deep learning experimental setup, chances are you can remove a few modules (or replace some trained features with random ones) with no loss of performance. Get rid of the noise in the research process: do ablation studies.*

*Can't fully understand your system? Many moving parts? Want to make sure the reason it's working is really related to your hypothesis? Try removing stuff. Spend at least ~10% of your experimentation time on an honest effort to disprove your thesis.’*

*As an example, Girshick and colleagues describe an object detection system that consists of three “modules”: The first proposes regions of an image within which to search for an object using the Selective Search algorithm, which feeds in to a large convolutional neural network (with 5 convolutional layers and 2 fully connected layers) that performs feature extraction, which in turn feeds into a set of support vector machines for classification. In order to better understand the system, the authors performed an ablation study where different parts of the system were removed - for instance removing one or both of the fully connected layers of the CNN resulted in surprisingly little performance loss, which allowed the authors to conclude*

*‘Much of the CNN’s representational power comes from its convolutional layers, rather than from the much larger densely connected layers.’*

*There is no one-size-fits-all. Metrics are likely to differ, depending on the application and types of model. If we narrow the problem down simply to one deep neural network then it is relatively straight forward to see that we can remove layers in a principled way and explore how this changes the performance of the network. Beyond this, in practice, every situation is different and in the world of large complex machine learning applications, this will mean that a unique approach is likely to be needed for each situation.”*

# Application of the Proposed Method

Results of work done.

# Conclusion

Conclusions learned from the results.

# References

Reference list.