



Instance-Level Salient Object Segmentation

Paper Review

Presented by:
Boniface Samuel Ijeoma

Introduction

- Introduced Apr. 2017 by
Guanbin Li, Yuan Xie, Liang Lin, Yizhou Yu

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- Introduced Apr. 2017 by Guanbin Li, Yuan Xie, Liang Lin, Yizhou Yu
- What Is Instance-Level Salient Object Segmentation?

Introduction

Identification and Isolation of Image Parts.

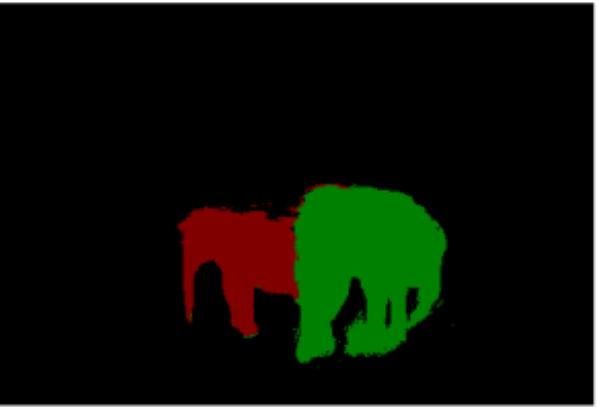
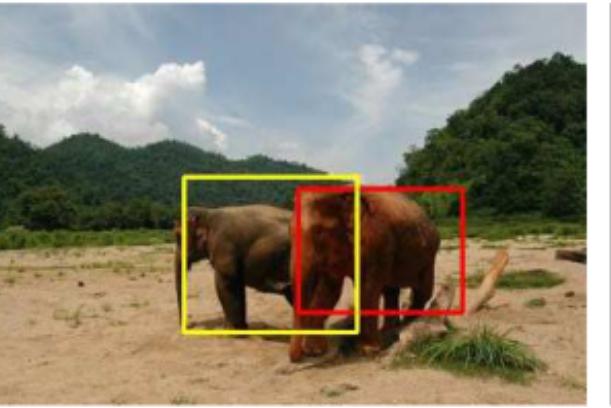
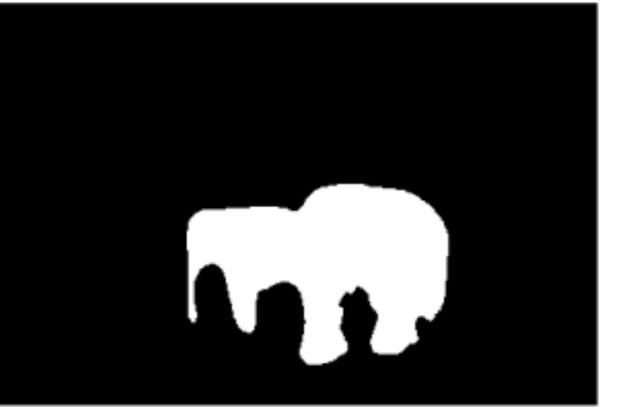


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Introduction

Identification and Isolation of Image Parts.

Differentiates each Object as a Distinct Entity.



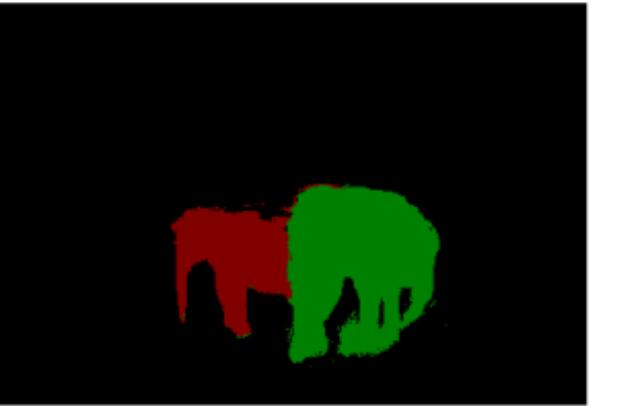
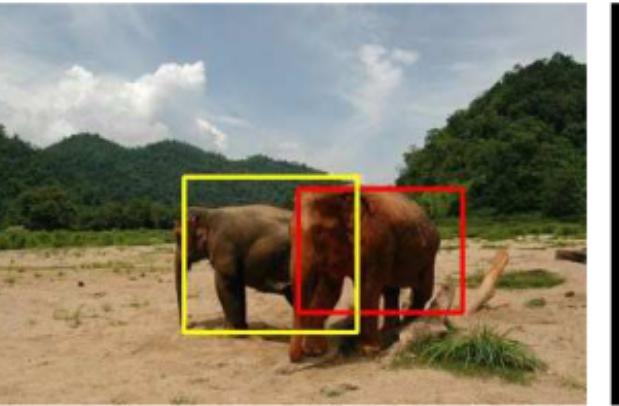
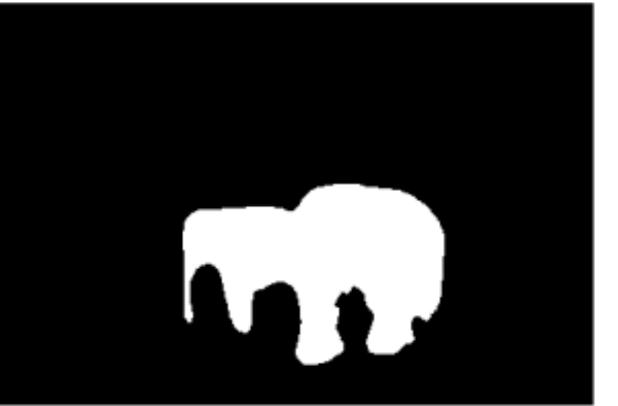
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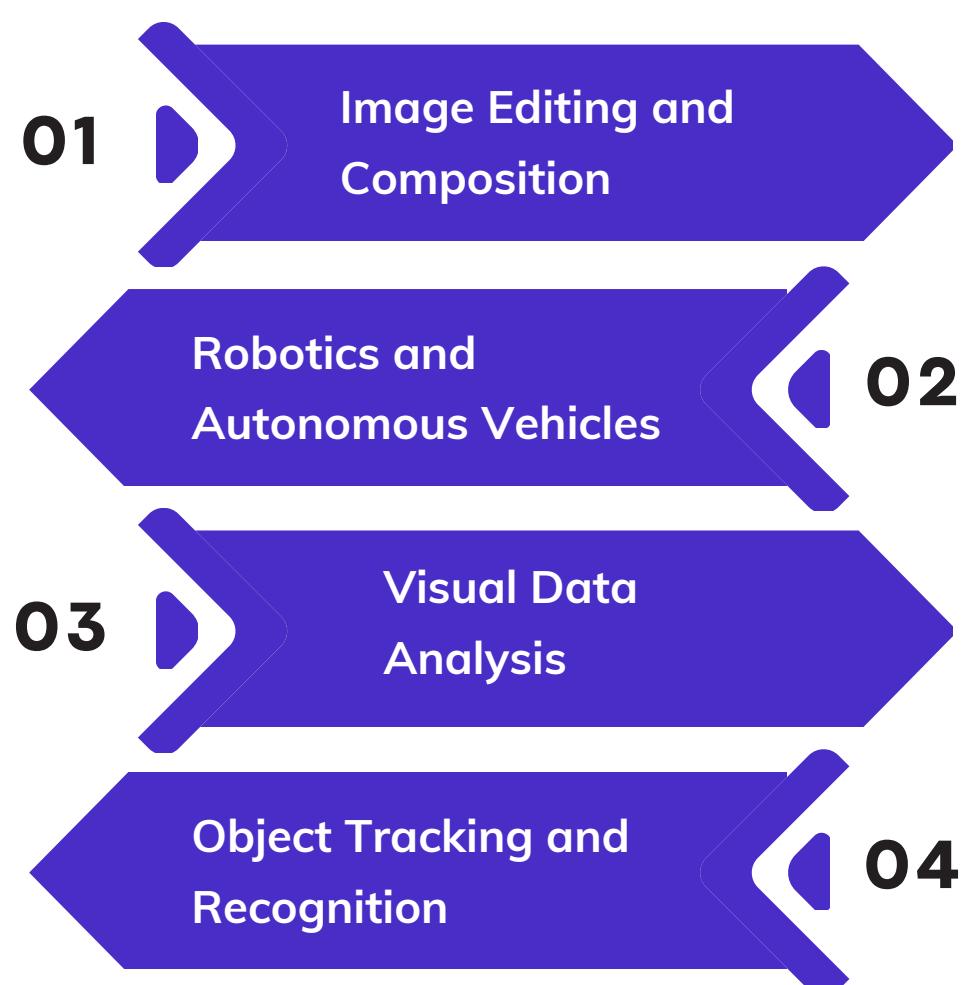
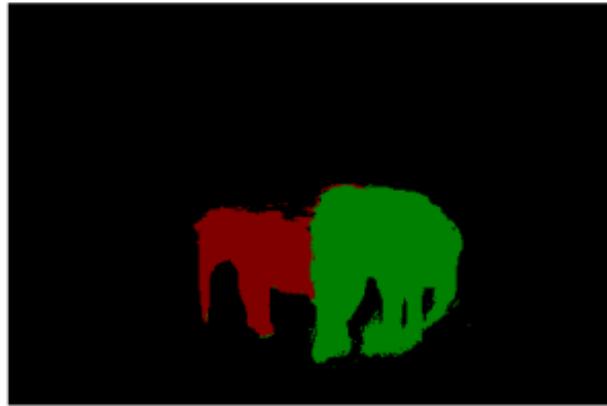
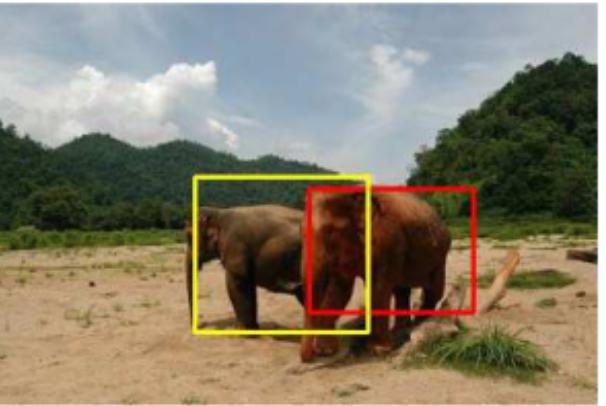


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- What Is Instance-Level Salient Object Segmentation?
- Problems & Applications

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Related work

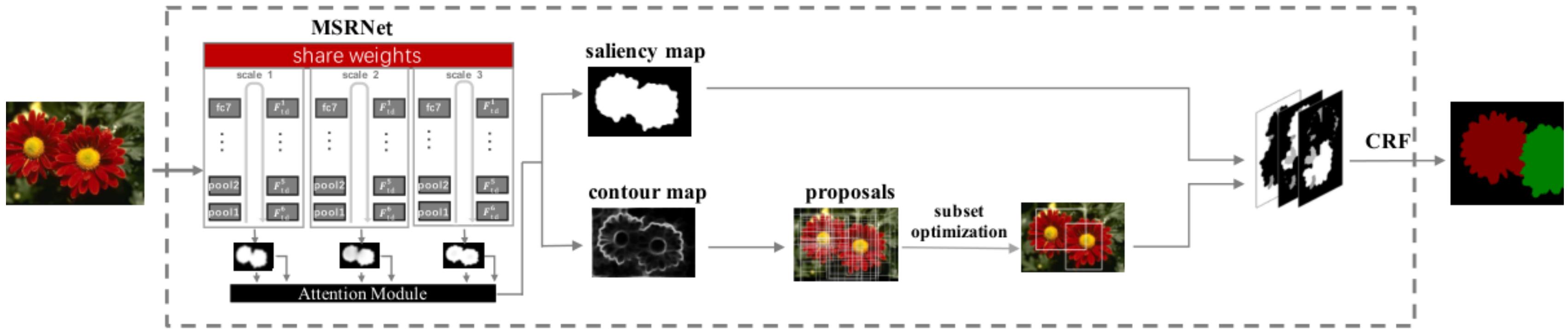
Traditional Methods

- Contrast-based Methods
- Graph-based Methods
- Feature Integration Theory

Deep Learning Innovations

- Instance Aware Segmentation
- Multi-scale and Hierarchical Features
- Fully Convolutional Networks (FCNs)

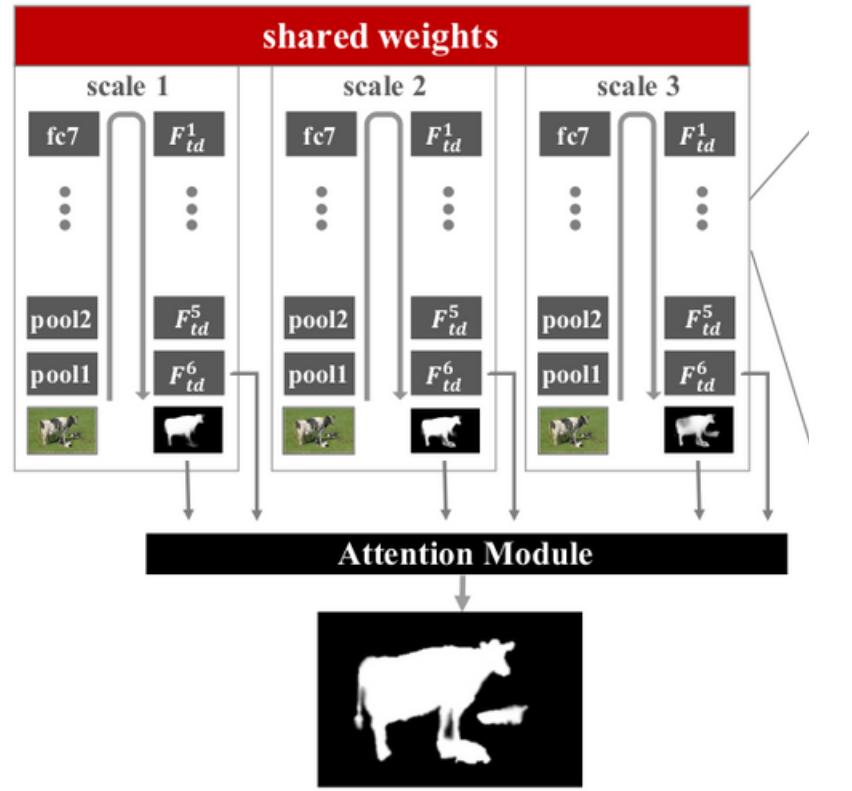
Methodology



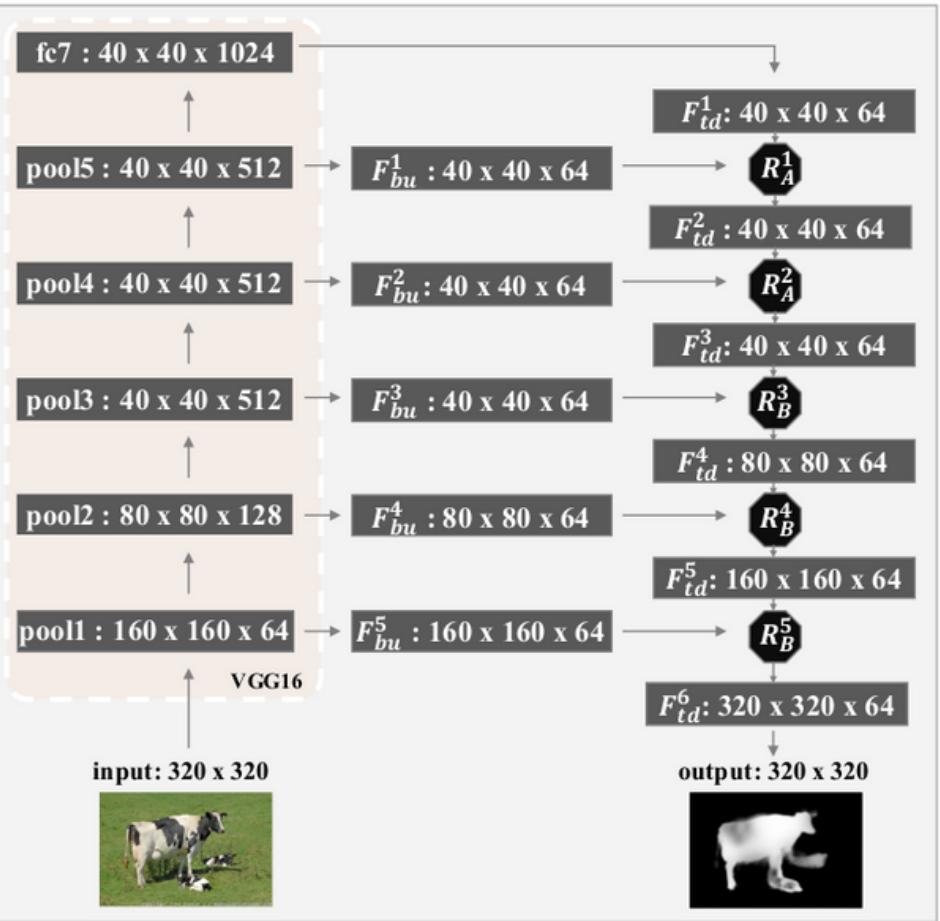
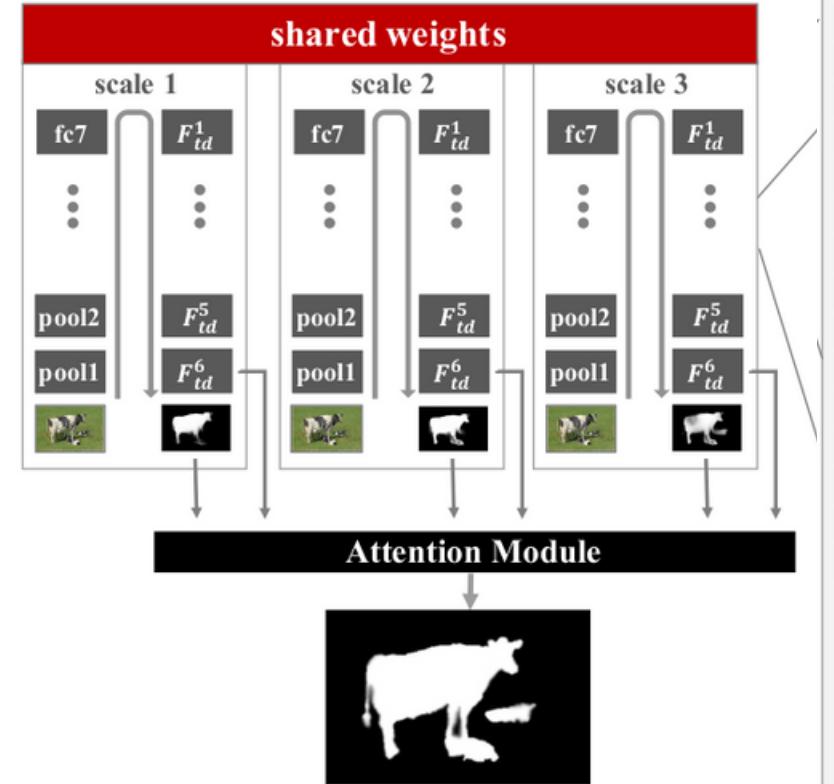
- Multiscale Refinement Network for Salient Region Detection
- Salient Instance Proposal and Refinement

Multiscale Refinement Network

Multiscale Feature Extraction



Multiscale Refinement Network

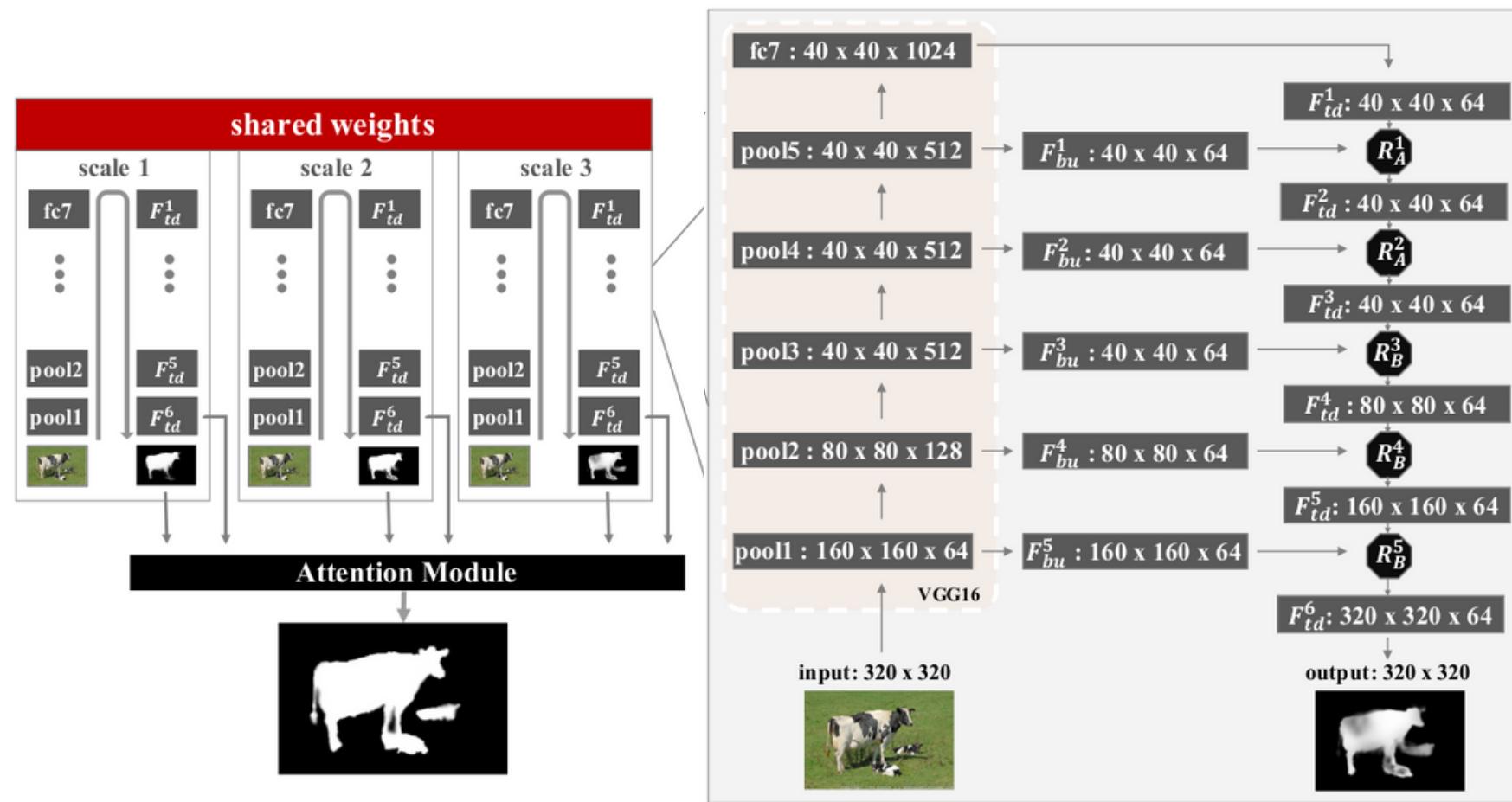


Multiscale Feature Extraction

Refinement Process (VGG network)

- Convolutional Backbone Network
- Top-Down Refinement Stream

Multiscale Refinement Network



Multiscale Feature Extraction

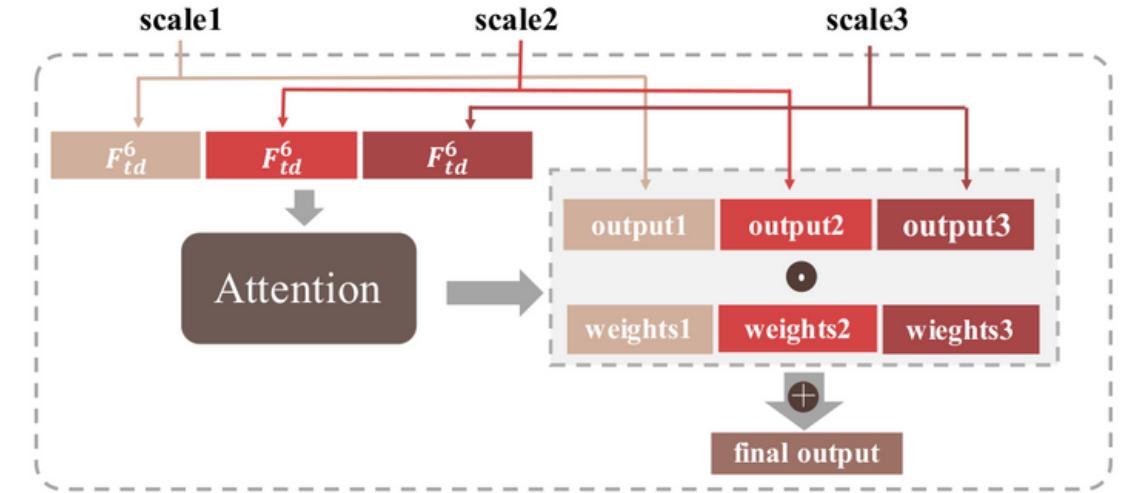
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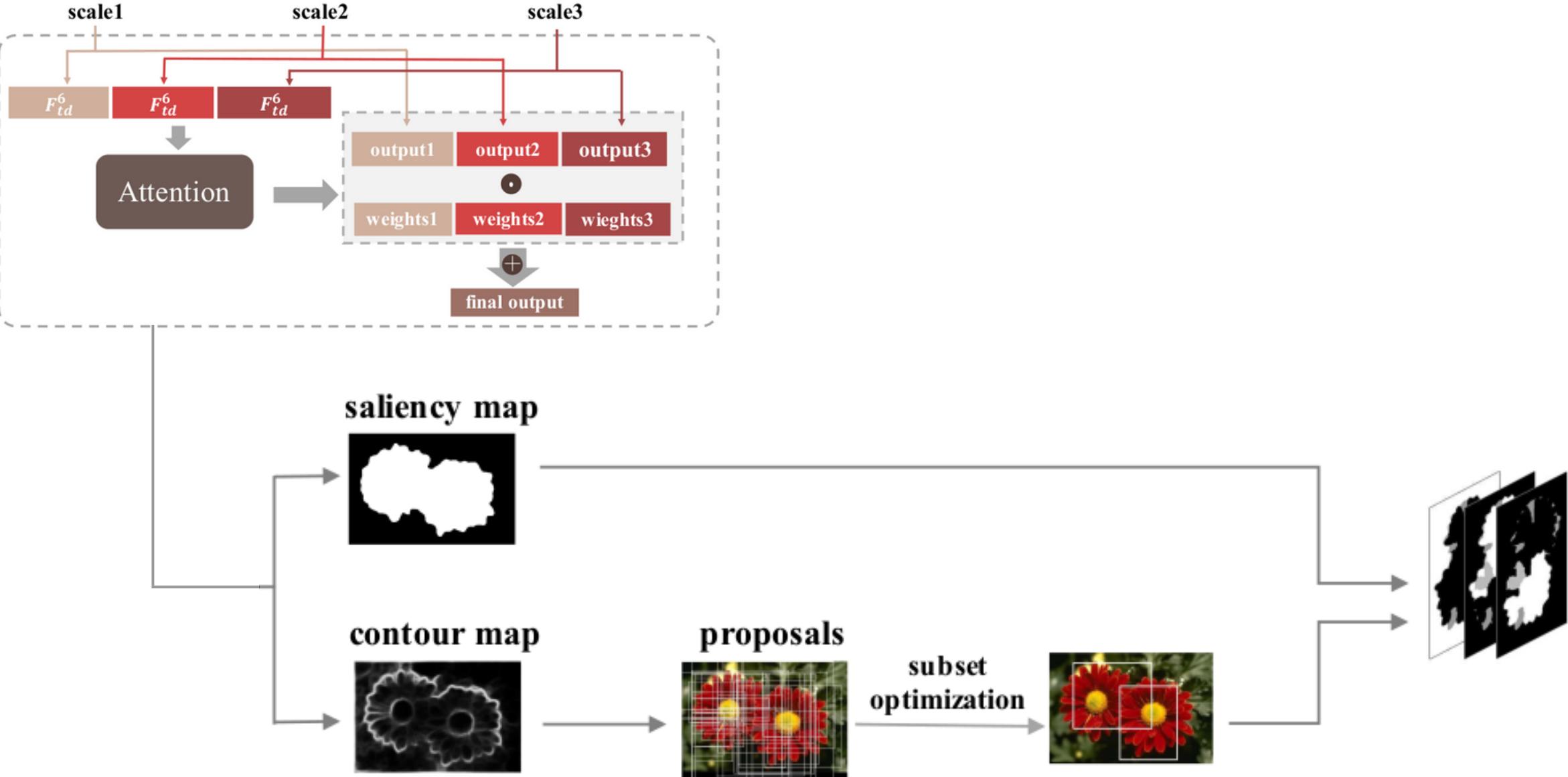
Multiscale Attention

- Feature Maps at Different Scales
- Attention Module
- Weighted Outputs

Salient Instance Segmentation



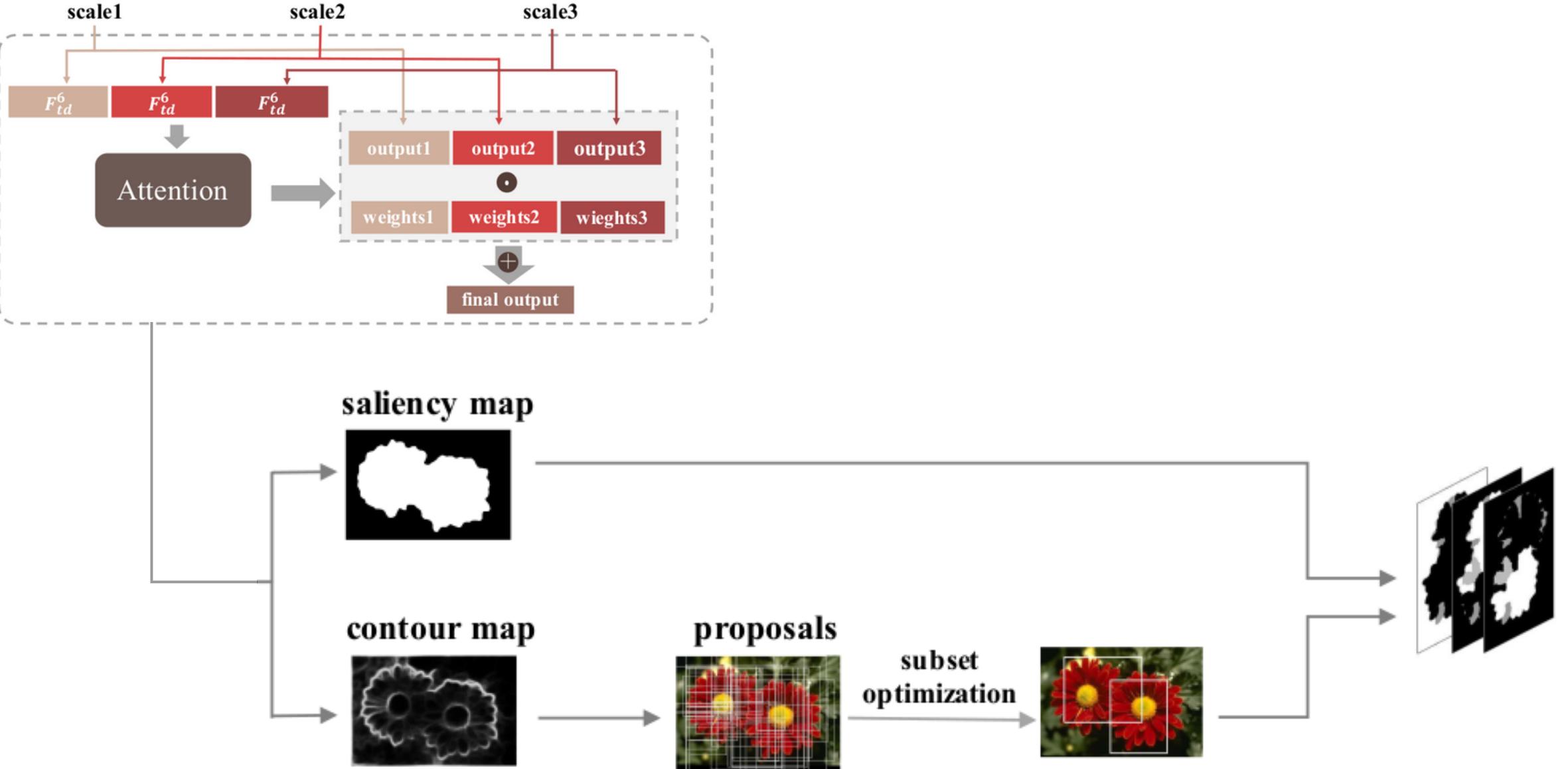
Salient Instance Segmentation



Multiscale Combinatorial Grouping (MCG)

- Generate salient object proposals

Salient Instance Segmentation



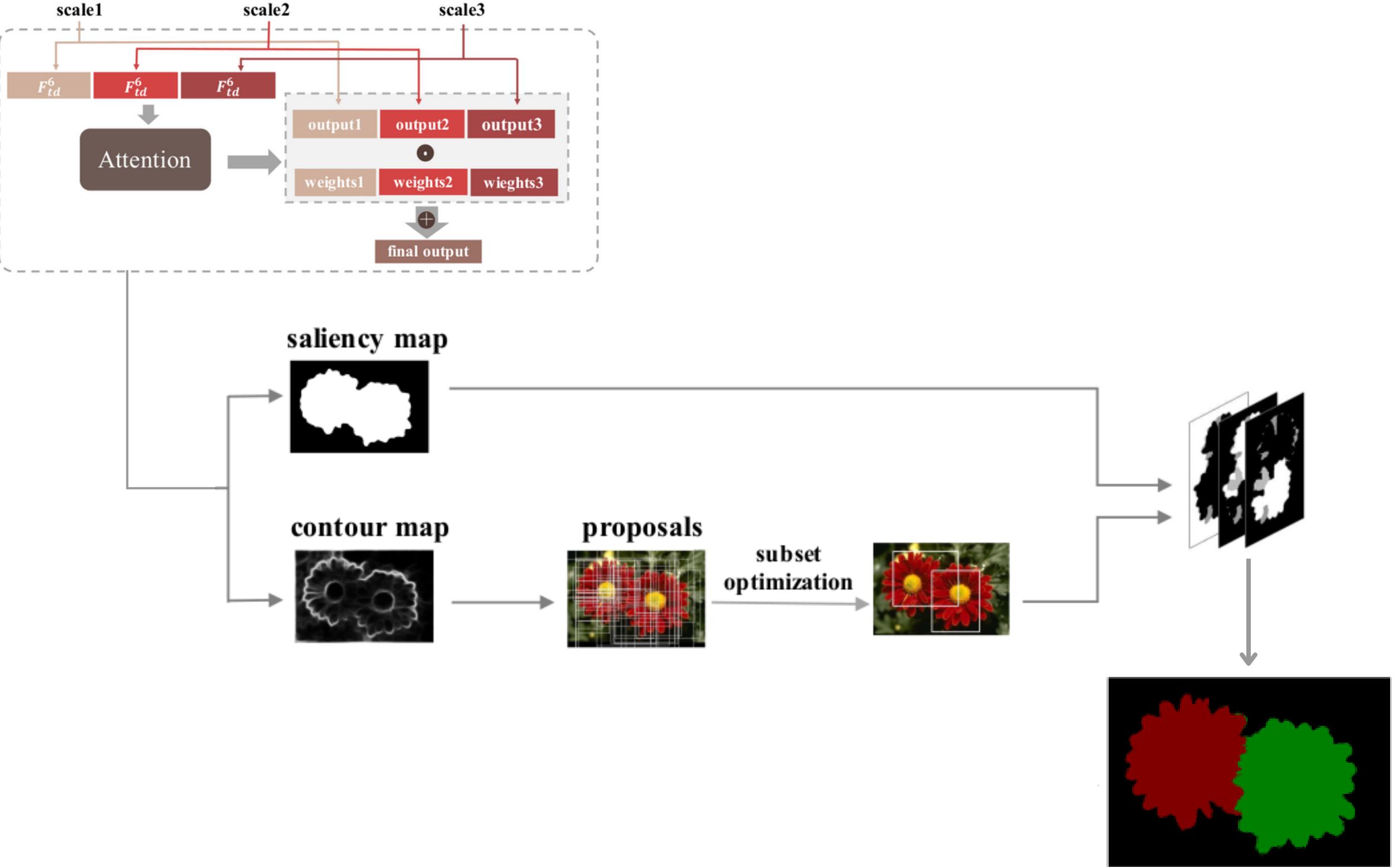
Multiscale Combinatorial Grouping (MCG)

- Generate salient object proposals

MAP-based subset optimization

- Salient Object Proposals Screening

Salient Instance Segmentation



Multiscale Combinatorial Grouping (MCG)

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Conditional Random Field (CRF)

- Refines Salient Instance Segmentation Results

Reference

Instance-Level Salient Object Segmentation :"
https://openaccess.thecvf.com/content_cvpr_2017/papers/Li_Instance-Level_Salient_Object_CVPR_2017_paper.pdf"

Youtube-Instance-Level Salient Object Segmentation
<https://www.youtube.com/watch?v=loransh6xXo>

**THANK YOU
FOR YOUR
ATTENTION**

