**Capstone Design(2)**

**Proposal**



**Subjects : Capstone Design(2)**

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1. **Project Title**

Project Title : Smoothie

“Smoothie” is a Photo Edit Program,

We select this project’s title to emphasize feeling of ‘Smooth’.

1. **Introduction & Motivation**

* Introduction

It is going to create a program that allows users to create smoother images by using deep learning for a major function called a Lasso.

With only a few number of checkpoints, users can produce the image that is much smoother.

* Motivation

It's necessary, but it's too, too uncomfortable.

According to the traditional method, it takes a lot of effort to get the shape of an apple.

This project was selected to eliminate unnecessary effort.

 



1. **Development & Implementation Contents**

* **Lasso Function**
* Show areas of snails based on learning data.
* Provides a convenient way to use by displaying a small number of points (approximately 3,4).
* Learning from a variety of data sets (released in detail later)
* **Lasso Function**
* Develop image editing programs using Qt
* Develops other useful features such as layers, paints, brushes, trims, resizing, spades, text, erasers, etc.
* **Error Minimization With TDD**
* Recognized the importance of error minimization through last Capstone design class.
* We will try to minimize errors by writing as many TCs as possible with TDD.
* We will open TC often.

1. **Goal**
2. Improve the speed and accuracy of the Lasso function.
3. Provide a variety of image editing functions
4. Minimize program errors

Our goal is developing simple photoshop program using Qt.

The main function is to apply ML to the lasso function to recognize a specific image area through four user-selected points, and to separate that area from the background layer so that users can edit it freely.

1. **Roles**

Park Juhyeon

-Collect Running Datasets

-Implementing a Learning Model

-Layer Function Implementation

-Test

Heo JeongWoo

* + Collecting Running Datasets
  + Implementing a Learning Model
  + Implementing sizing
  + Test

Hong Jin

-Collecting Running Datasets

-Learning data to model

-Implementing Qt UI and basic functions

-Test

1. **Market Research**

1. Photoshop

- Point by point to draw out an object.

- Not only is it taking a long time, and it takes a lot of hands, the results also differ depending on individual ability

2. Remove.bg

-Free.

-Use background erasing method**.**

-Unable to set the desired part and only people can be recognized

3. Photopea

-Free.

-Provide basic image editing functions in Web.

-Magnetic Lasso function exists but it’s too weak.

4. BackGround Burner

-Remove background by separating regions in two colors**.**

-Good performance for simple images, but not for complex images**.**

-It can’t be edited and only available as JPG, PNG.

**7. Project Schedule.**

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | March | | | April | | | | | May | | | | June | | |
| Development Contents | 11 | 18 | 25 | 1 | 8 | 15 | 22 | 29 | 6 | 13 | 20 | 27 | 3 | 10 | 17 |
| Content Acquisition &  Data Survey |  |  |  |  |  | Midterm Demonstration and Presentation |  |  |  |  |  |  | Final Demonstration and Presentation |  |  |
| Collect Initial Usage Datasets |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Implementing a Deep Learning Model |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Check the Results of Learning |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Oligami Functional Test |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Implementing layer editing |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Preparing Midterm Demonstration and Presentation |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Implementing other editing functions |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Test and Debugging |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Preparing Final Demonstration and Presentation |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Writing manuals and reports |  |  |  |  |  |  |  |  |  |  |  |  |  |