**CSCE 689 Computational Photography**

**Report on Assignment 5**

# Overview

The objective is to perform image retargeting using the Seam Carving technique.

# Deliverables

The contents of the submission have the following:

|  |  |
| --- | --- |
| Code\ | Directory containing the python source file: main.py |
| Report\_430000753\_RizuJain.pdf | This report. |
| Images\ | Blank Directory, should contain input images. |
| Results\ | Blank Directory. Output images are saved here upon execution of program. |

# Setup

The assignment was developed in the following environment:

* Host OS: Windows 10
* IDE: Spyder (Python 3.7)

# Main Task: Seam Carving Algorithm

This task is implemented in the function:

def SeamCarve(input, widthFac, heightFac, mask):

    return output, target\_size

The algorithm is implemented in three parts:

1. computing the energy function,
2. finding optimal seam, and
3. removing the seam.

The three parts are repeated until the desired size is reached.

## **Results**

### Image 1

|  |  |
| --- | --- |
| Original Image | |
|  | |
| Height Halved | Width Halved |
|  |  |

### Image 2

|  |  |
| --- | --- |
| Original Image | |
|  | |
| Height Halved | Width Halved |
|  |  |

### Image 3

|  |  |
| --- | --- |
| Original Image | |
|  | |
| Height Halved | Width Halved |
|  |  |

### Extra Credit: Image 4

|  |  |
| --- | --- |
| Original Image | Mask |
|  |  |
|  |  |
| Height Halved (With Mask) | Width Halved (With Mask) |
|  |  |
| Height Halved (Without Mask) | Width Halved (Without Mask) |
|  |  |

### Failure Case: Image 5

|  |  |
| --- | --- |
| Original Image |  |
|  |  |
| Height Halved by Image Rescaling | Width Halved by Image Rescaling |
|  |  |
| Height Halved by Seam Carving | Width Halved by Seam Carving |
|  |  |

# References

~ End of Report ~