Project 1 Writeup

Instructions

- Provide an overview about how your project functions.
- Describe any interesting decisions you made to write your algorithm.
- Show and discuss the results of your algorithm.
- Feel free to include code snippets, images, and equations.
- List any extra credit implementation and result (optional).
- Use as many pages as you need, but err on the short side.
- **Please make this document anonymous.**

Project Overview

My function do a convolution network which apply filter to the image. Here is how I design my algorithm: I check if the filter is even dimension and throw exception First, I check image shape to see if it is a 2d image or 3d. If it is 3d, I slice the 3d array by spliting different channels (RGB) and then recursively call itself since it goes to the 2d direction. In 2d array, rotate the kernel 90*2=180 degrees, flip it and do the same thing as correlation. I deal with 0 padding, by calculating the filter matrix size and add 0 zeros to fulfill the original matrix. Then I do the mathematical multiplication.

I don't think I have too much trouble on implementing this, the most challenging thing is to figure out how to use Github. I got the exact hybird image result as the output.
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Here is the image set for cat and dog:

image set for plane and bird:

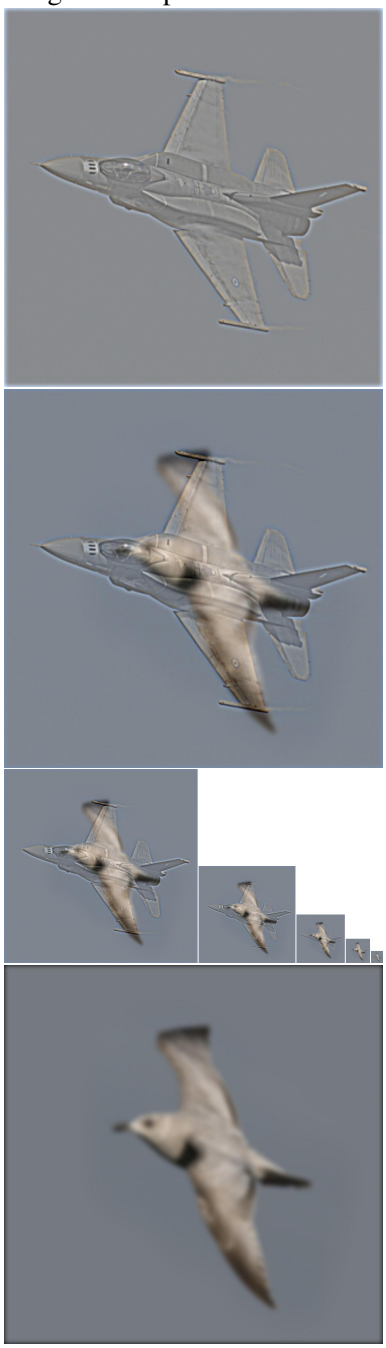

image set for bike and motorcycle:

image set for fish and submarine:

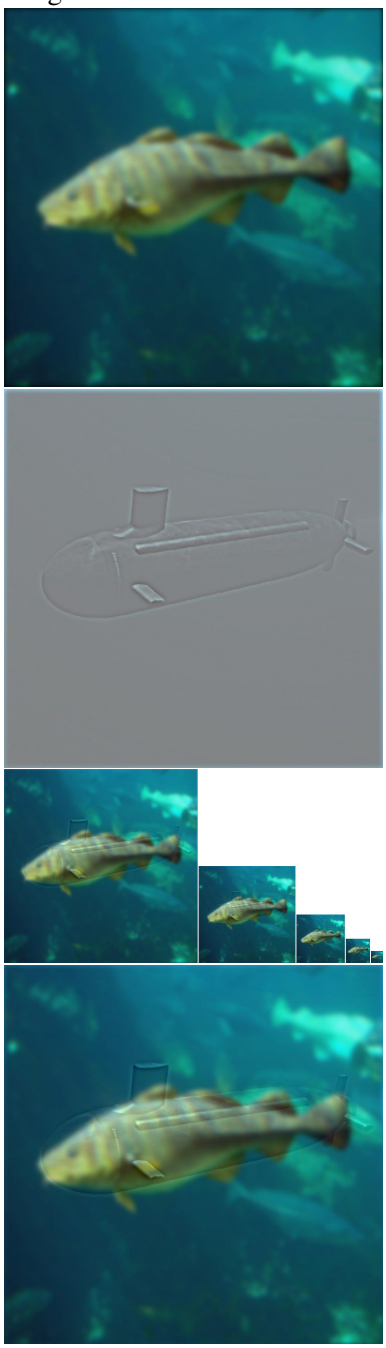

image set for E and M:

(1)

Special Section for Kobe Bryant

A few days ago, the whole world lost one of the greatest basketball player ever. This section is for Kobe Bryant, the best player in the world. All the prayers to those people were involved in the accident. I watched Kobe when I was in high school, back to 2008, when he won his first ring without Shaq. I was touched by his passion, focus and mentality and sure a lot of people are also inspired by him.
May Kobe and Gigi rest in peace.
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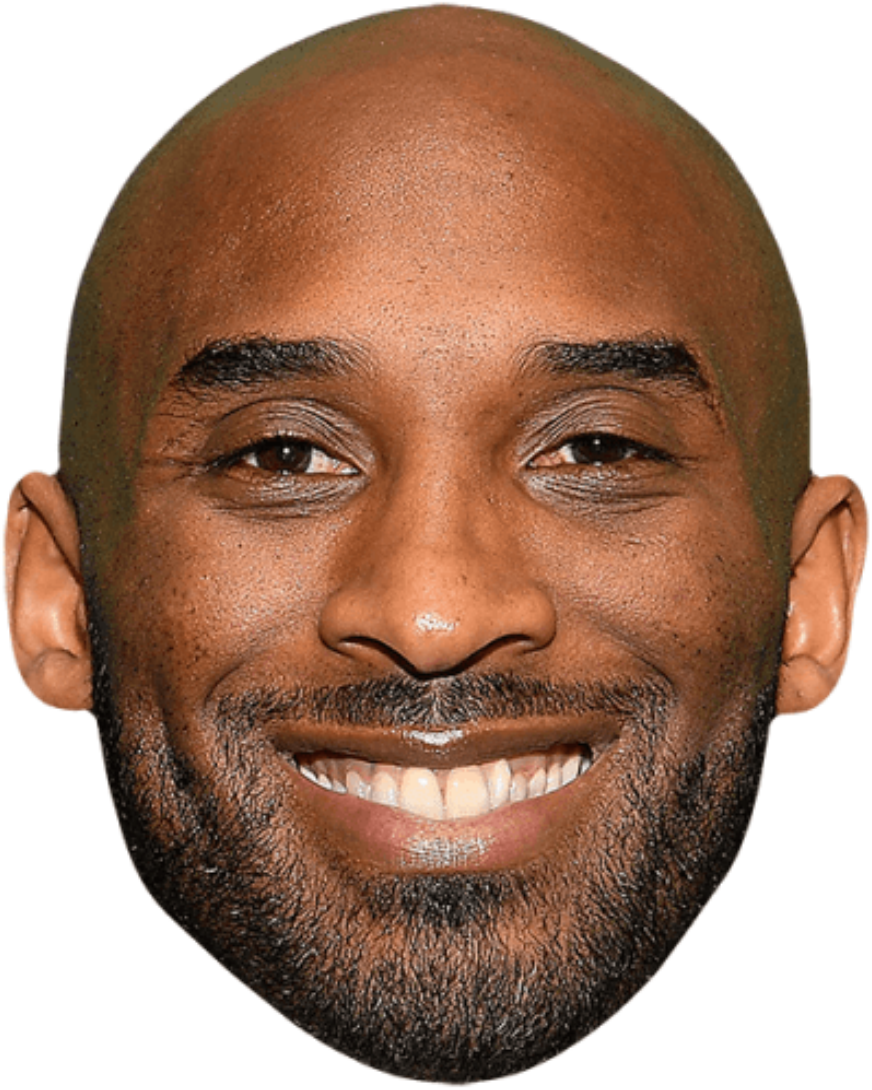
raw image:kobe

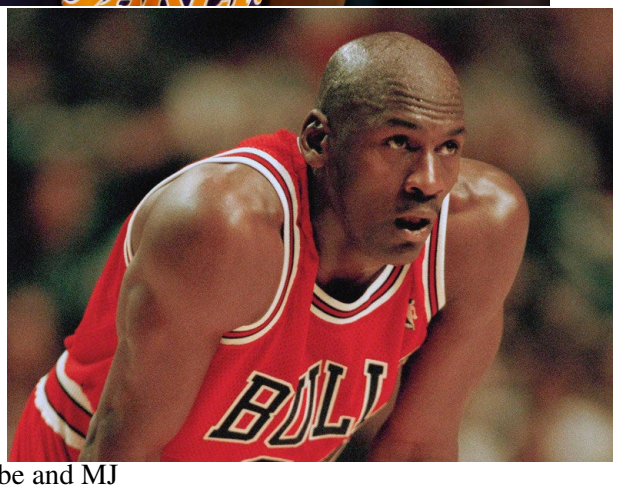


raw image:Jordan

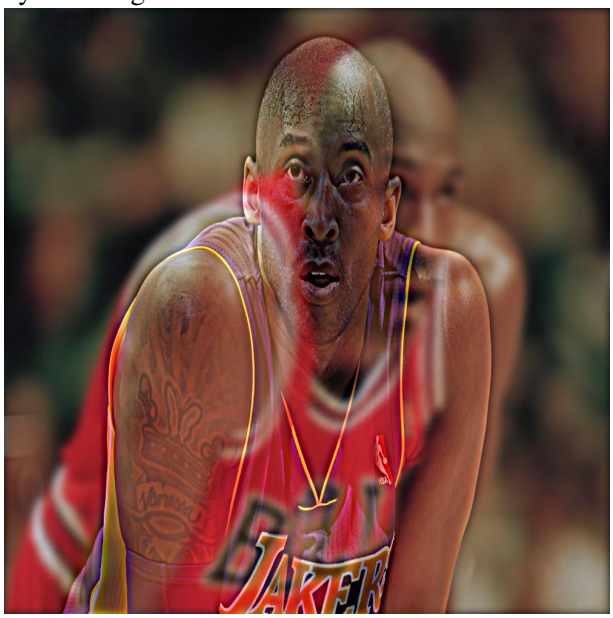
hybrid image: Kobe and MJ

raw image:kobe

raw image:Jordan



hybrid image: Kobe and MJ



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unrelated stuff

My code snippet highlights an interesting point.

```
one = 1;
two = one + one;
if two == 2
    disp( 'This computer is not broken.' );
end
```

Result

1. Result 1 was a total failure, because...
2. Result 2 (Figure 1, left) was surprising, because...
3. Result 3 (Figure 1, right) blew my socks off, because...

Figure 1: *Left:* My result was spectacular. *Right:* Curious.

My results are summarized in Table 1.

Condition	Time (seconds)
Test 1	1
Test 2	1000

Table 1: Stunning revelation about the efficiency of my code.

Extra Credit (Optional)

1. Implementation A, code snippets, and results

```
one = 1;
two = one + one;
if two == 2
    disp( 'This computer is not broken.' );
end
```

2. Implementation B, code snippets, and results

```
one = 1;
two = one + one;
if two == 2
    disp( 'This computer is not broken.' );
end
```