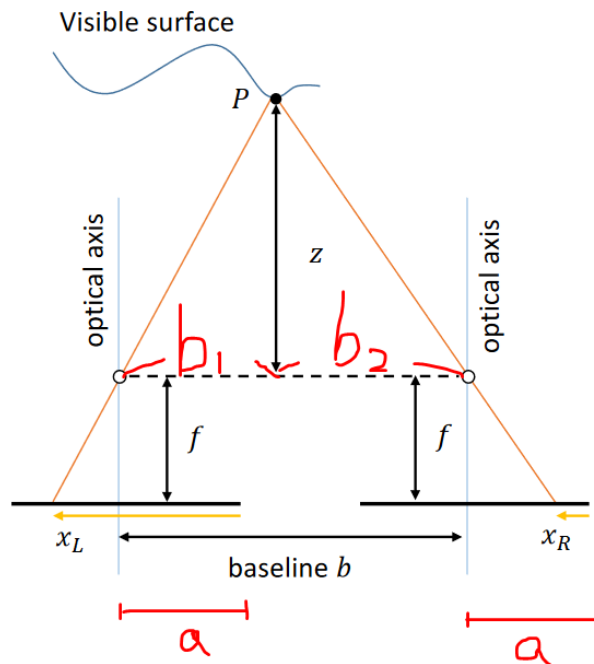


# Assignment 4:

## Stereo Matching

系級: 電機四  
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學號: b04505004

1.



$$X_L = a + \frac{b_1}{z}f, \quad X_R = a - \frac{b_2}{z}f$$

$$d = X_L - X_R = \frac{b_1 + b_2}{z}f = \frac{b}{z}f$$

得證之

2. 本題使用課堂上提及的 *Fast Cost-Volume Filtering for Visual Correspondence and Beyond* 這篇論文實作。

cost computation: Square Distance (L2 distance)

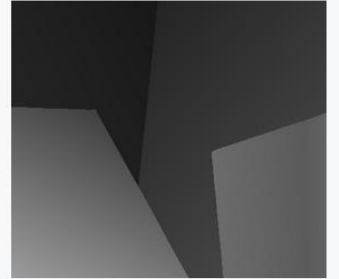
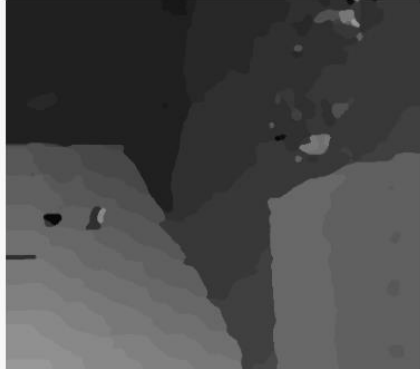
cost aggregation: Joint Bilateral Filtering

disp. optimization: WTA (Winner Take All)

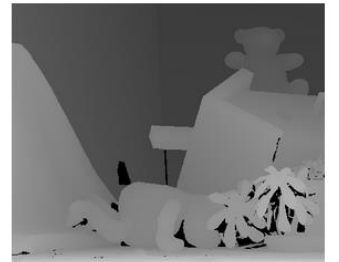
disp. refinement: Left-right Consistency Check, Hole Filling, Median Filtering



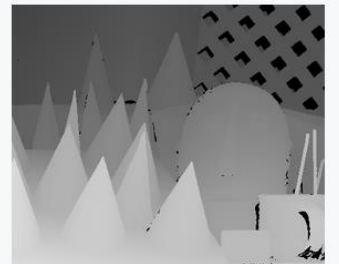
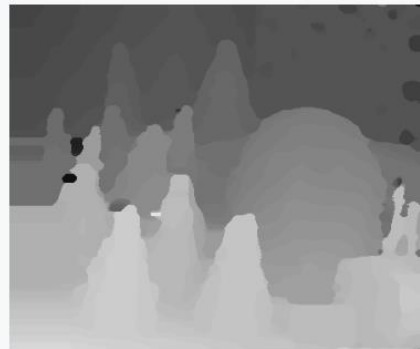
Bad Pixel Ratio: 7.68%



Bad Pixel Ratio: 4.94%



Bad Pixel Ratio: 16.69%



Bad Pixel Ratio: 14.95%

Average: 11.07%