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Laboratory
Stereo Matching

Images

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- We have two stereo and rectified images
  - L.pgm and R.pgm

Disparity Function

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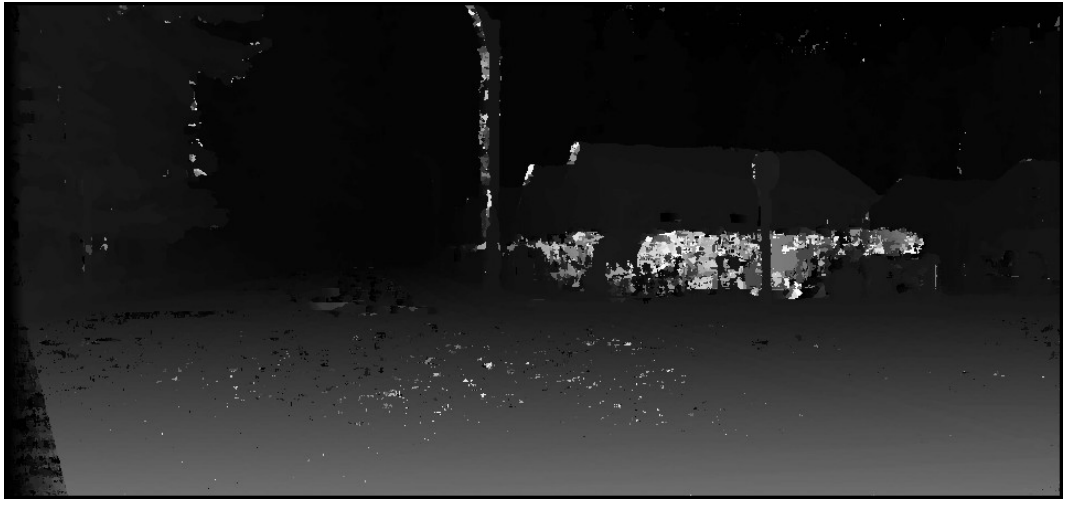
- Develope the following function
  - void mySAD_Disparity7x7(const cv::Mat &l, const cv::Mat &r, cv::Mat &out)



Disparity Function

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- Use a 7x7 neighborhood on the left image to match against right candidates
- Where the SAD match reaches the minimum value take it as the best correspondence
- Save disparity d as CV_32FC1
- Limit the search range as [0, 127]
- Hints
  - We can solve this with 5 nested cycles

V-Disparity

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- Starting from the computed disparity create a new cv::Mat vdisp using
  - void VDisparity(const cv::Mat &disp, cv::Mat &out);
  - Height ⟶ the same as disparity
  - Width ⟶ 128
- Each row represents an histogram of the values of the same row in the disparity image
- Namely each pixel encodes how many matches we have at a given disparity for that row