

2018 VC HW2

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Environment: Ubuntu 16.04

compiler: g++

How to run:

g++ -DCIF motion_search.cpp -o process_CIF (for CIF)

g++ -QDCIF motion_search.cpp -o process_QCIF (for QCIF)

./process_CIF [CIF video path] [psnr output]

./process_QCIF [QCIF video path] [psnr output]

5 search method I chose:

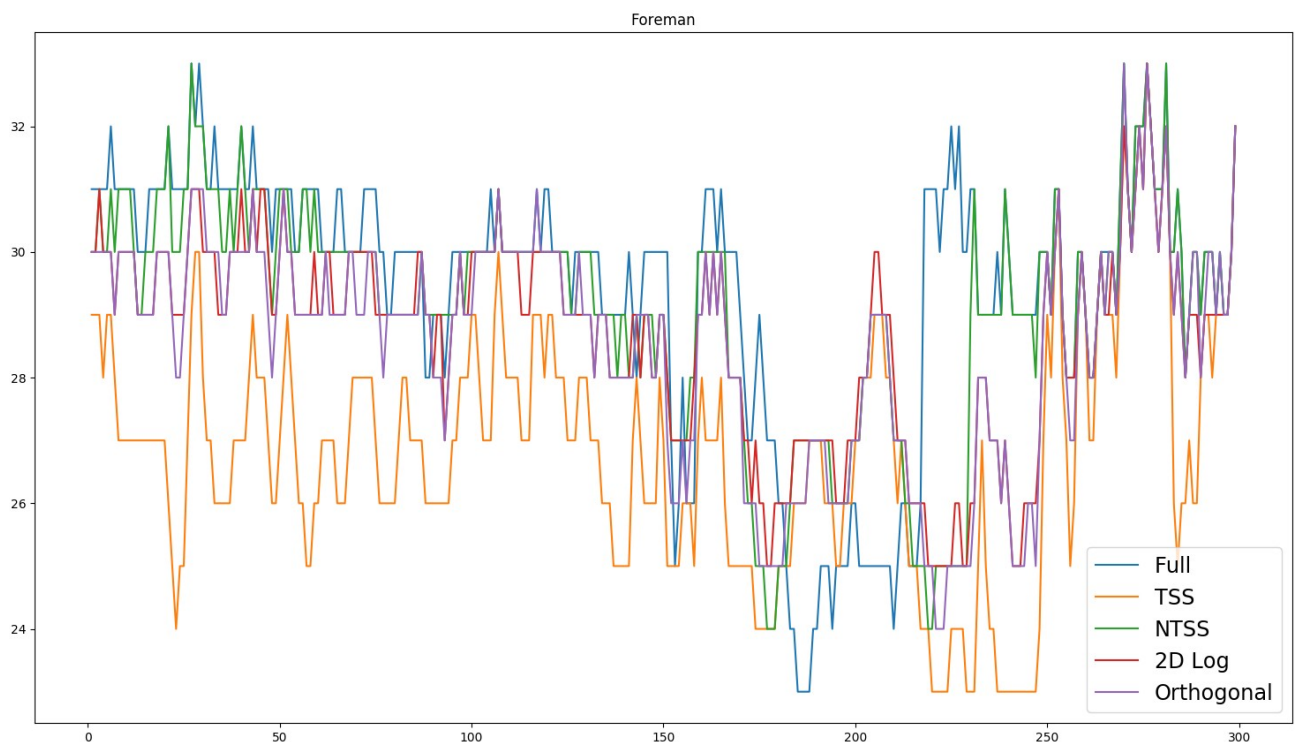
- Full Search
- Three-Step Search
- New-Three-Step Search
- Two Dimensional Logarithmic Search
- Orthogonal Search

Block Size = 8

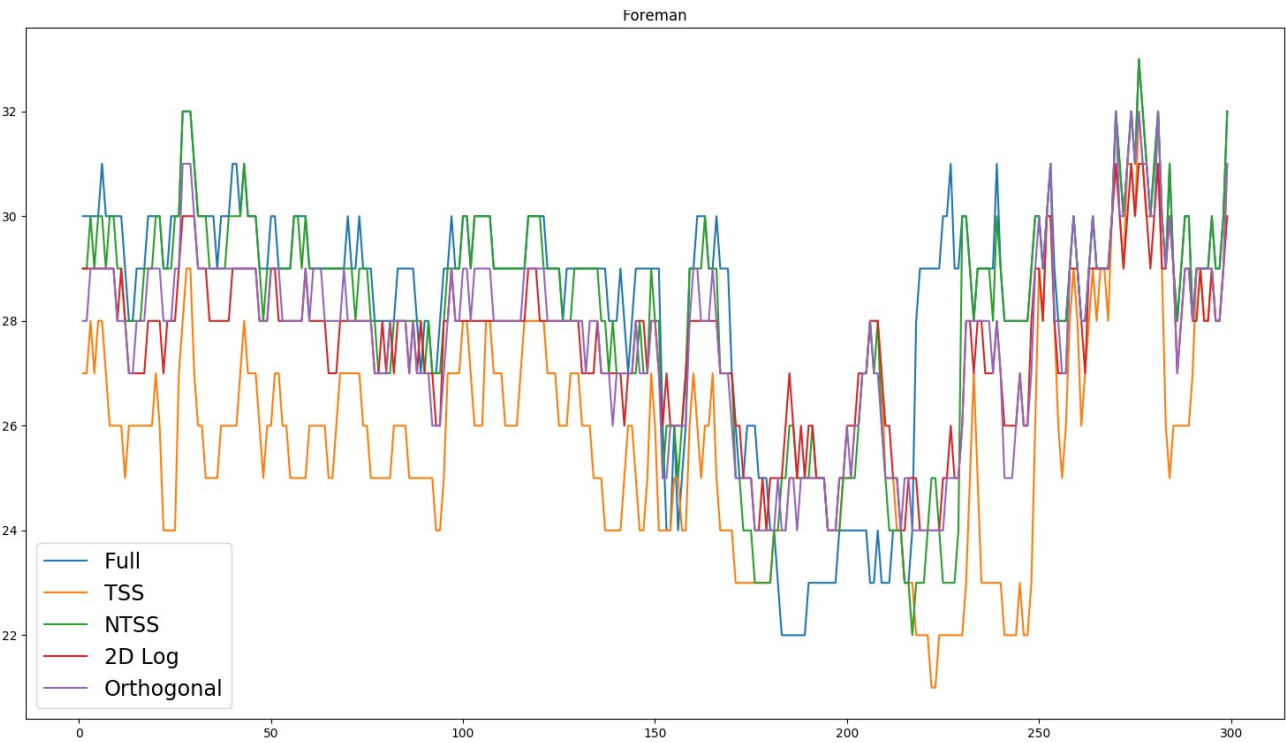
For Full Search, I chose search region = 7.

For others, I chose step size = 16.

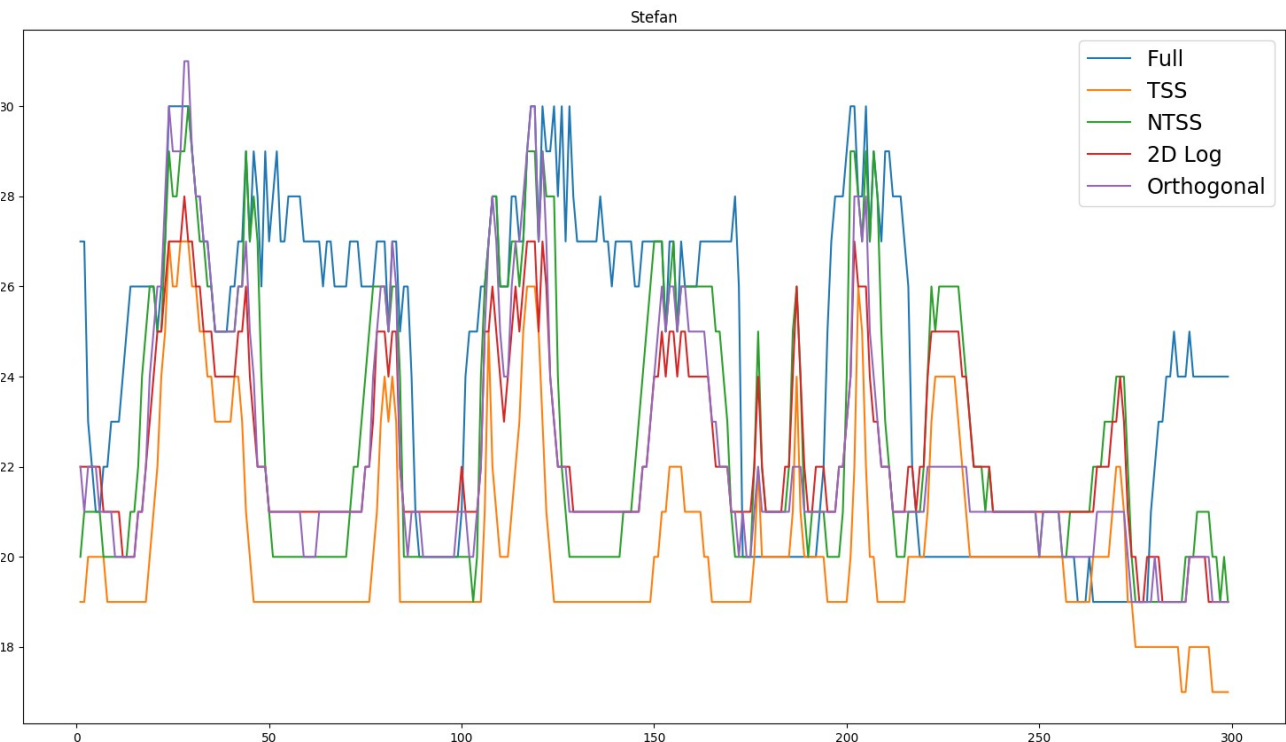
Foreman



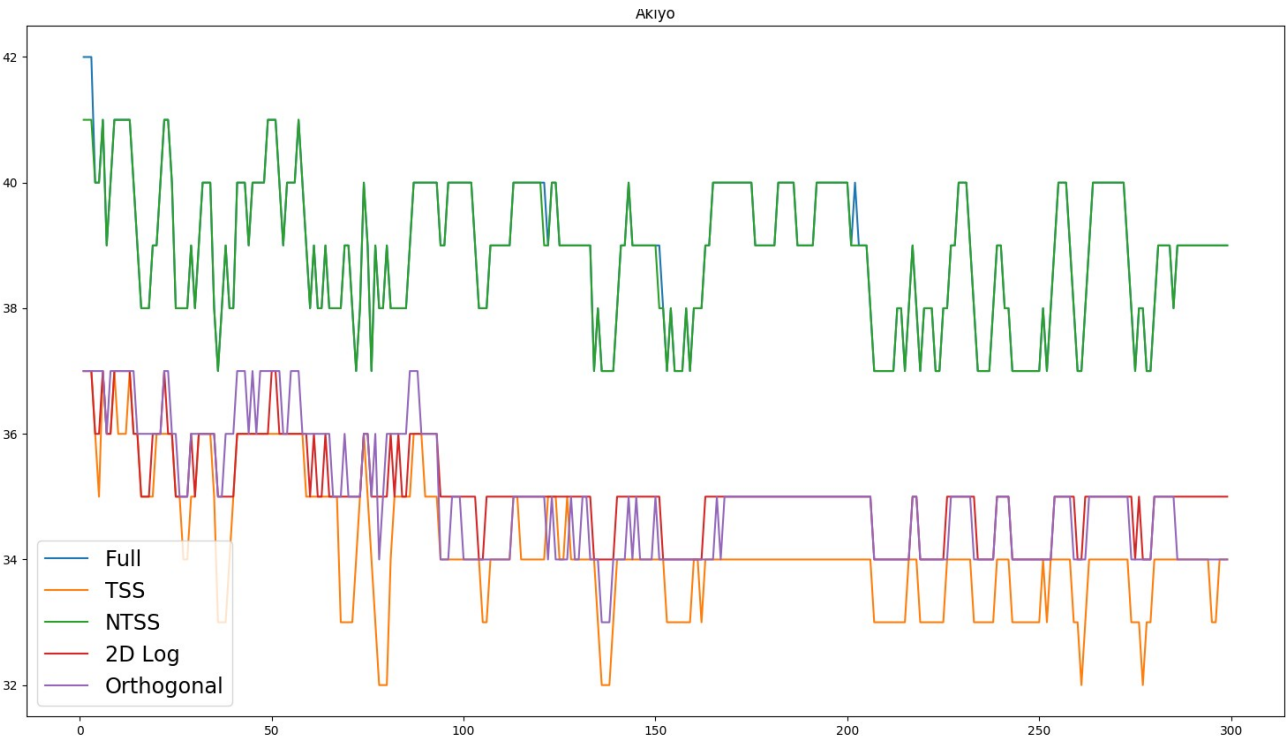
Foreman with block size = 16



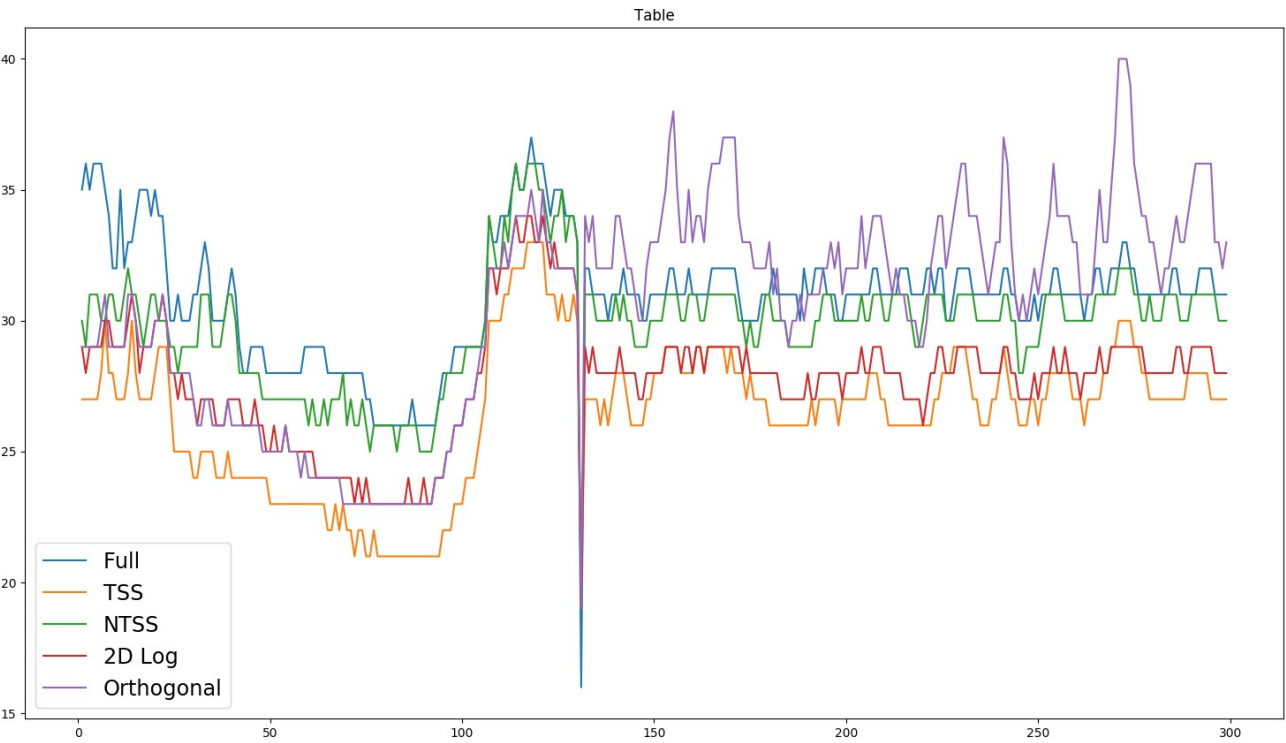
Stefan



Akiyo



Table



Conclusion

- Block size = 8 is slightly better than Block size = 16 since we slice the image finer.
- Orthogonal and NTSS performs best. Sometimes even better than Full search because I set my step size larger than search region.
- TSS performs worst