HW 3

Huaiqian Shou
hshou
CV

Q1.1

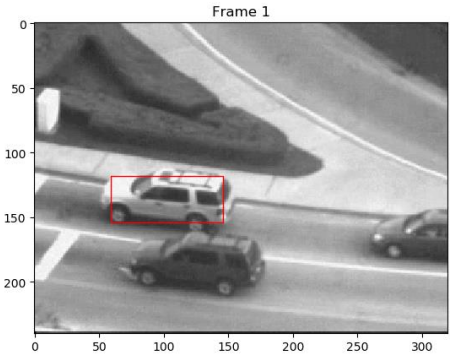
Jacobian Matrix which is $\begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix}$

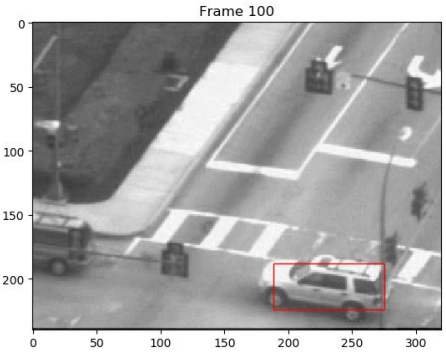
A is $\nabla \mathrm{I} \frac{\mathrm{dW}}{dP}$

B is $I\big(W(x,p)\big) - T(x)$

It should be invertible

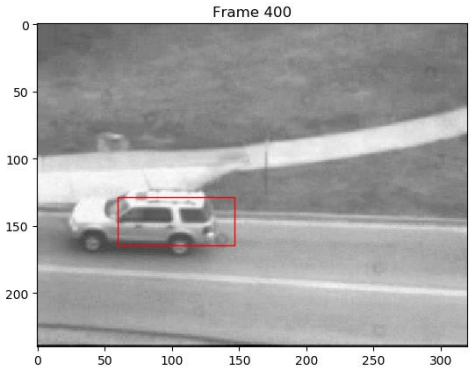
Q1.3


Frame 1


Frame 100


Frame 200


Frame 300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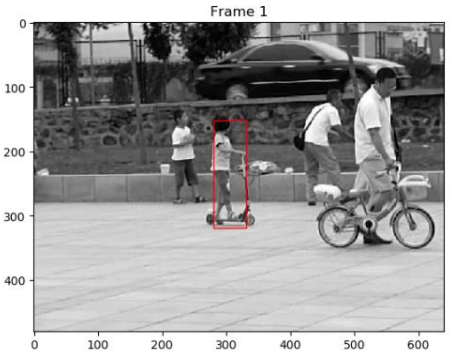
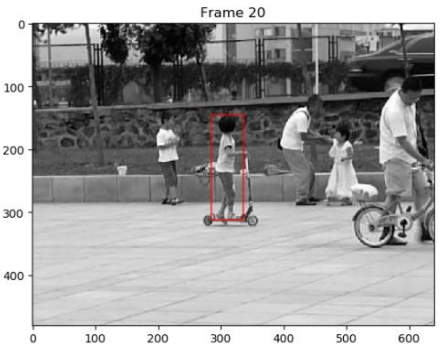

Frame 1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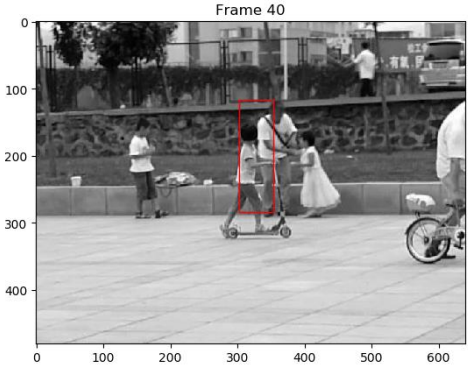
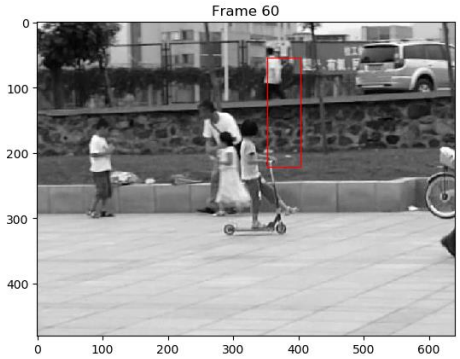
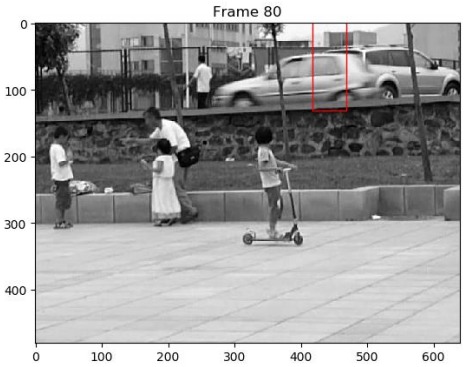
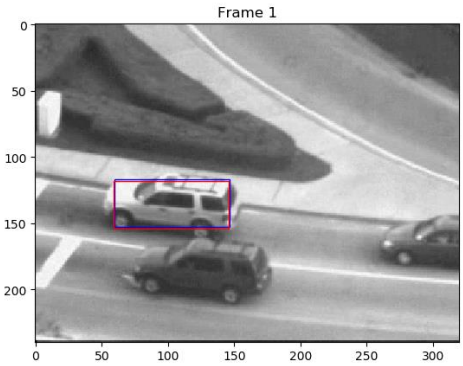
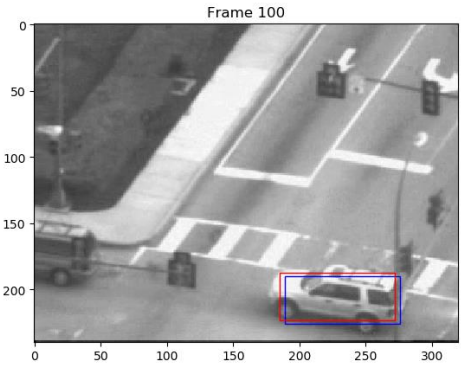






Q1.4



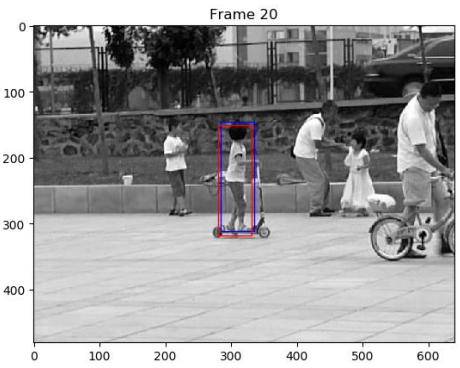



Frame 200


Frame 300


Frame 400


Frame 1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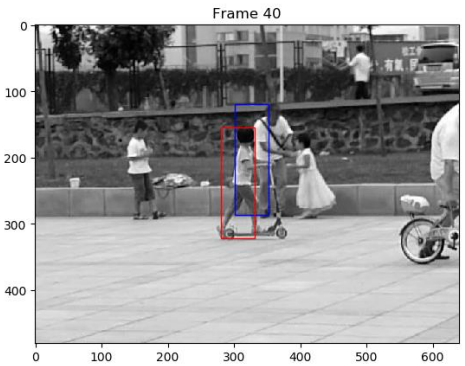
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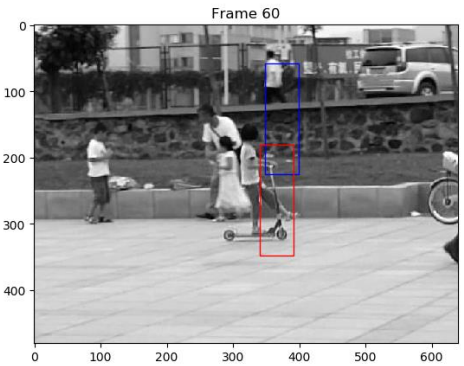
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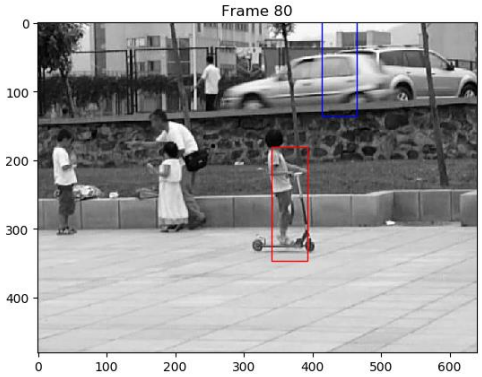
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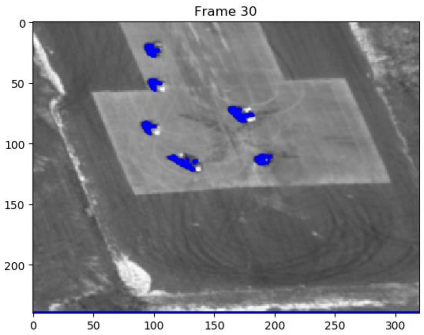
Q2.3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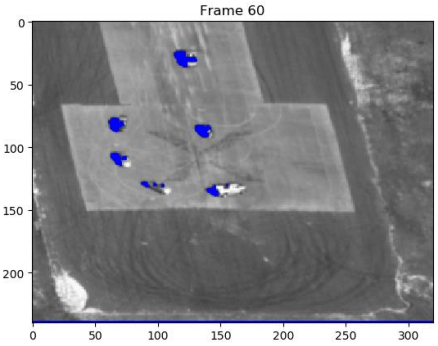
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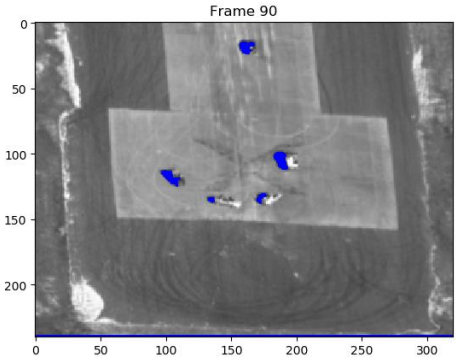
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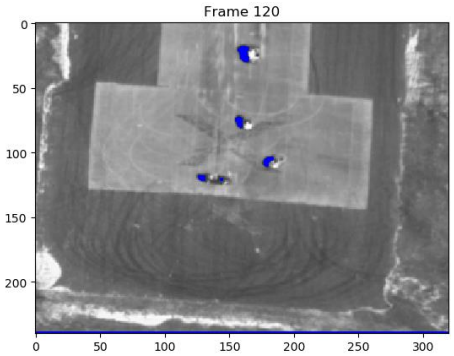
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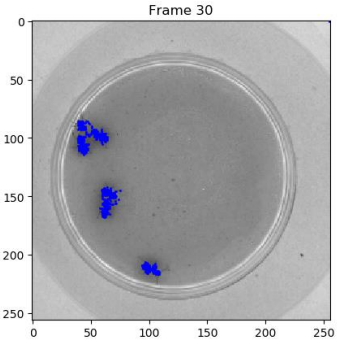
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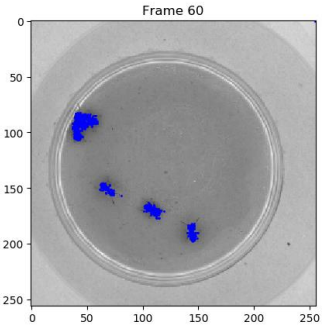
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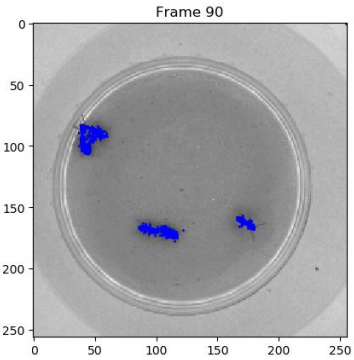

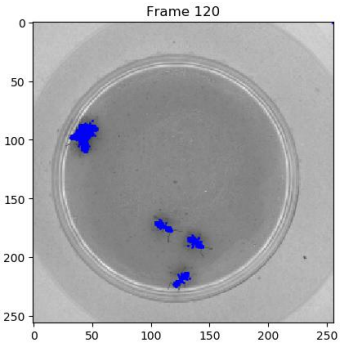

3.1

I think the reason might be that if we do the calculation in the original way, matrix A would change as p changes, but in the inverse way, A does not change through the iteration, which save a lot of computation. However, it seems that my InverseCompositionAffine does not boost the calculation speed.