

Deep DensePose R-CNN

PlumSix



About PlumSix



Byeonguk Min, KAIST CS
phraust@kaist.ac.kr

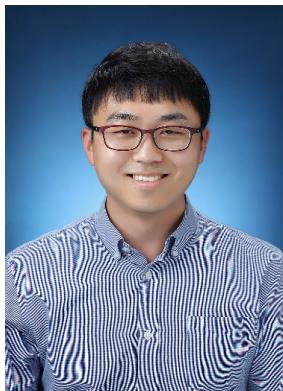


Hakyeong Kim, KAIST CS
hkkim95@kaist.ac.kr



Jaehwee Lee, KAIST Math
wog27@kaist.ac.kr

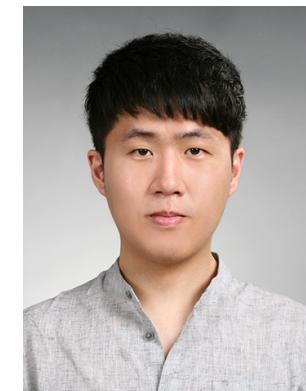
Mentors



SHOUNAN AN
ethan.an@netmarble.com



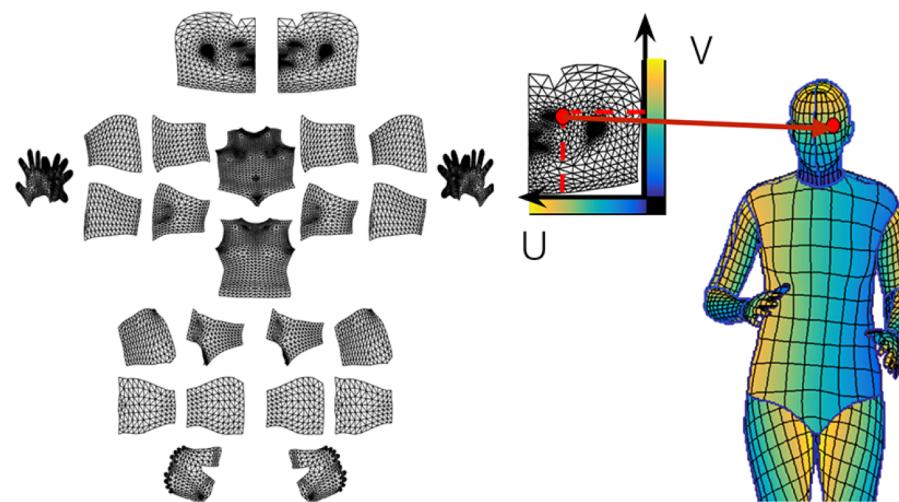
Seungje Park
psj2354@netmarble.com



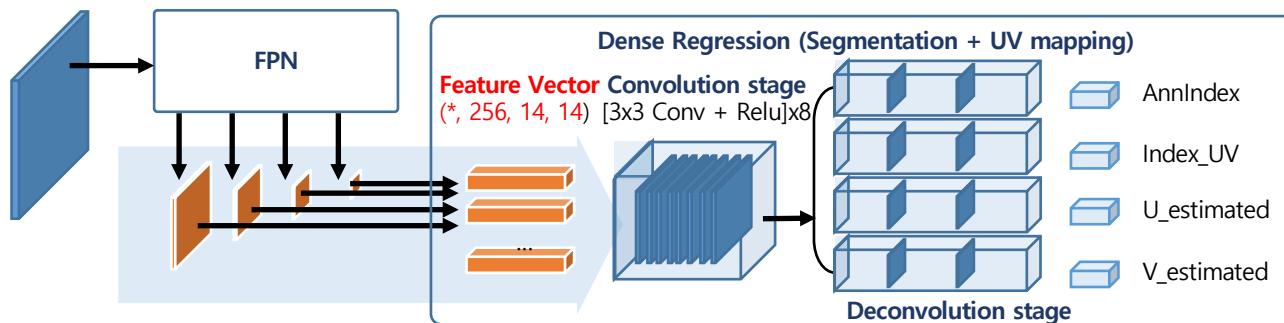
Youngbak Jo
howisee@netmarble.com

of Game Dev. AI Team, nARC(netmarble AI Revolution Center), netmarble

Task

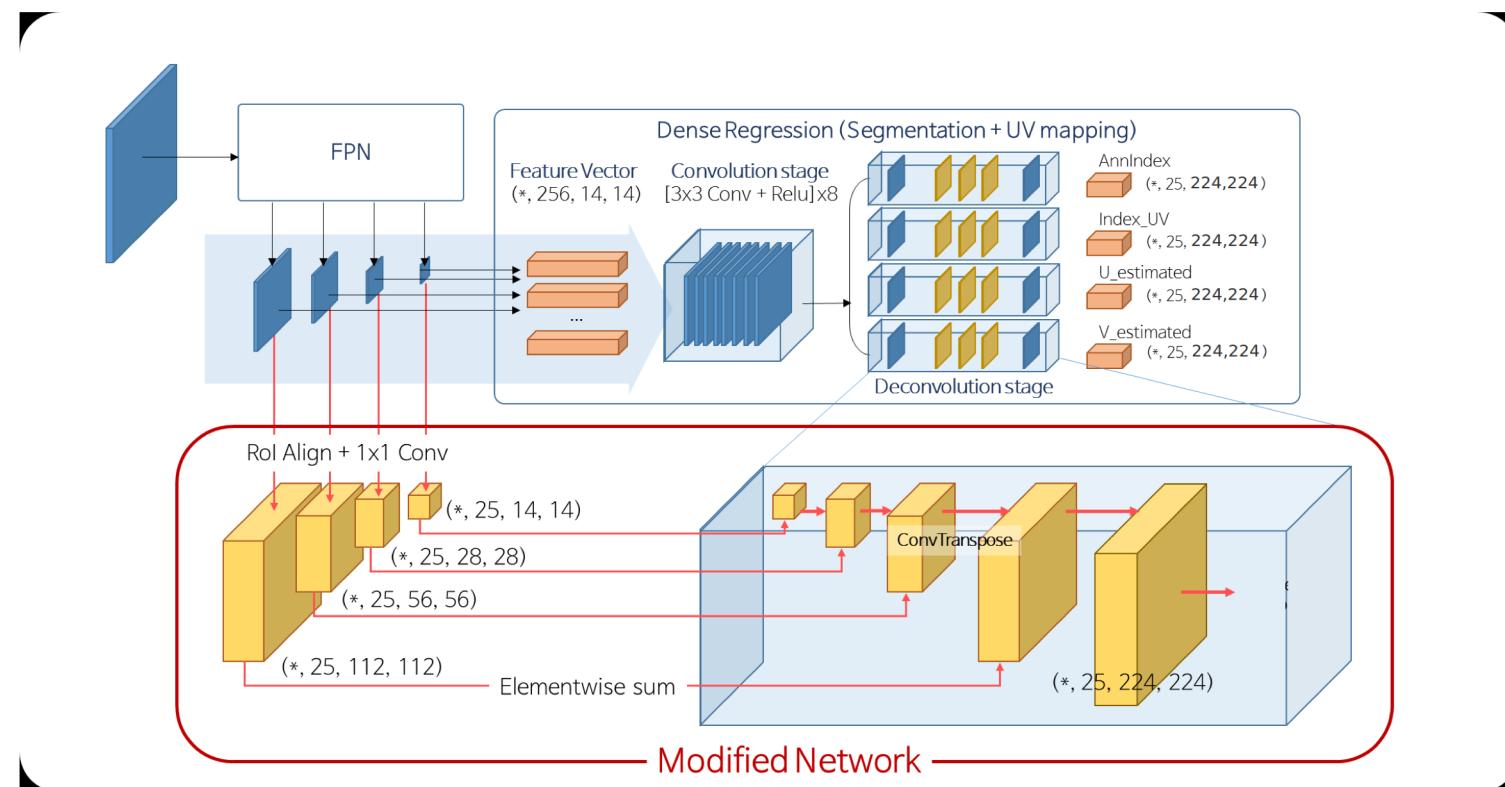


Origin DensePose R-CNN

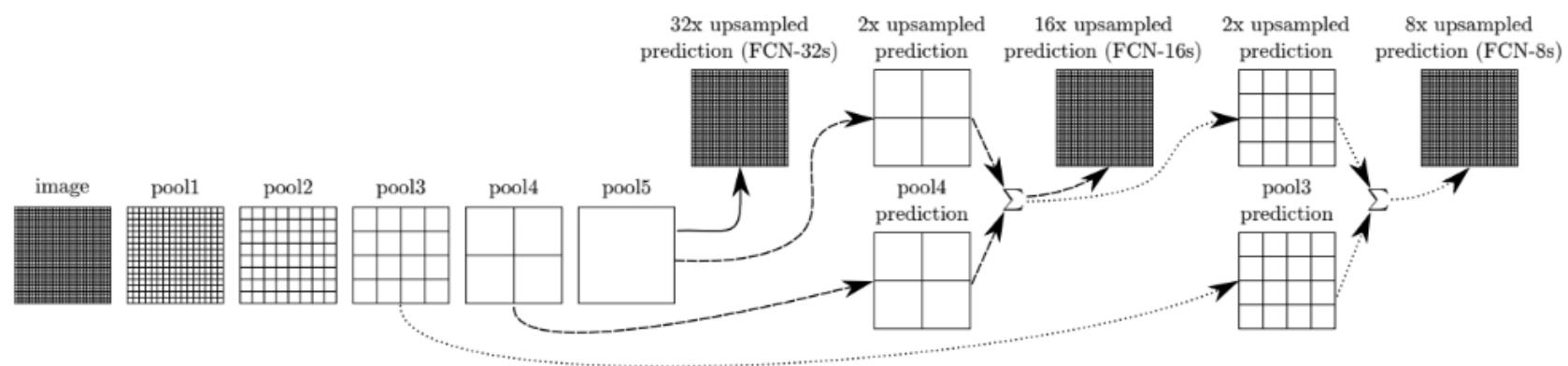


- We focused on that
 - Output resolution isn't large enough
 - Time complexity doesn't matter in the evaluation
 - Approach : build up-sampling layers deeper

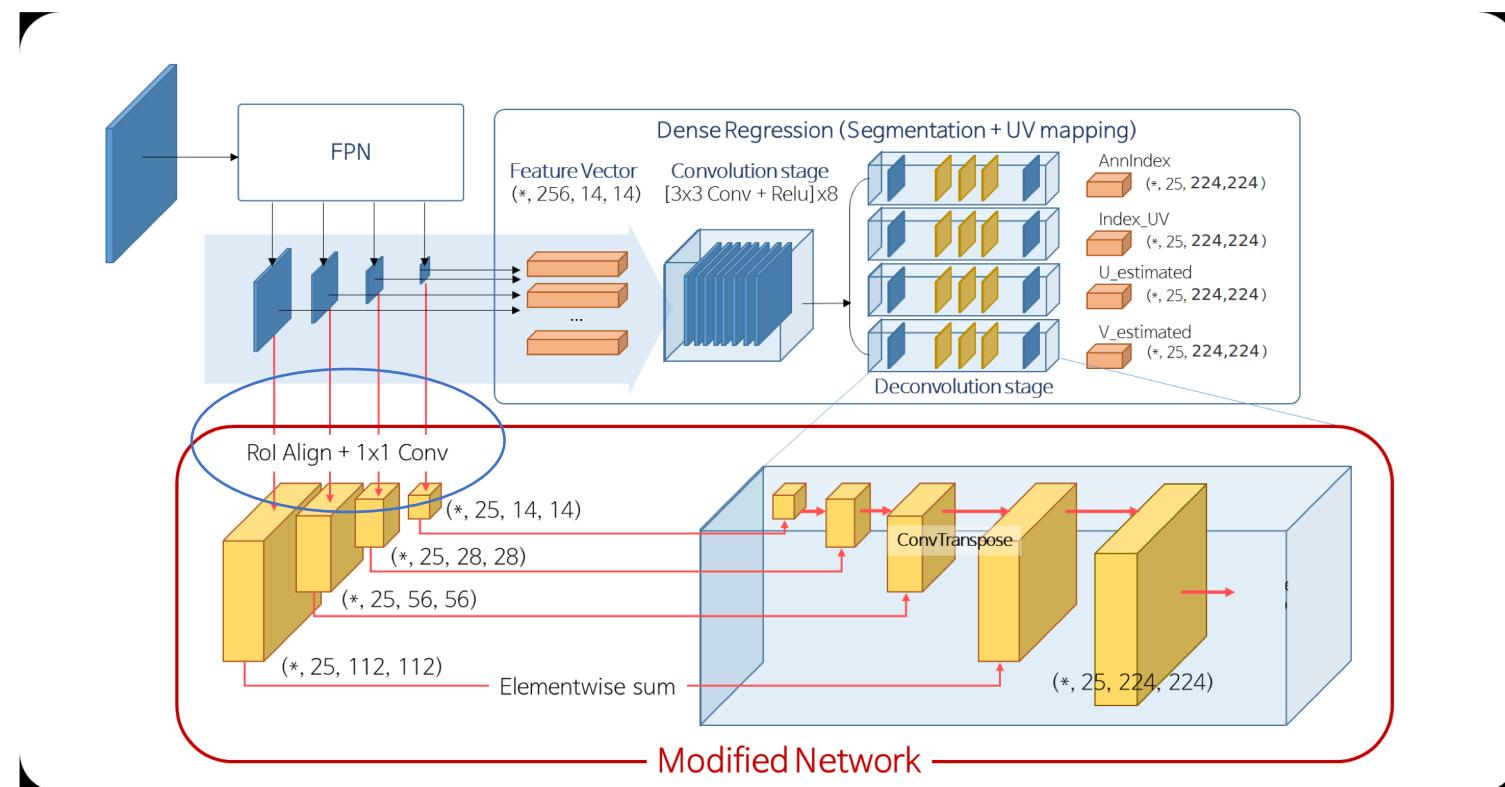
Our Model



Inspiration – FCN8



Our Model



Experiments

- Fine-tuned DensePose R-CNN (+X101-32x8d)
- Most of hyper-parameters followed baseline's
 - Image per minibatch : 3 → 2
 - Learning rate x0.666
 - Learning schedule x1.5 (195k iter)
 - Used Xavier initializer for new layers
- No ensembles
- No additional datasets
- Freeze backbone, faster branch

Results

	mAP	AP50	AP75	APm	API
Origin	0.56	0.89	0.64	0.51	0.59
Ours	0.582	0.893	0.657	0.504	0.610

Conclusion

- Our model is nothing but fine-tuned deep DensePose R-CNN which returns higher resolution output
 - We feed FPN layers again
 - mAP performs about 2% better
 - But for smaller area, our model doesn't help
- We may try some techniques introduced in the DensePose paper

Thank you