

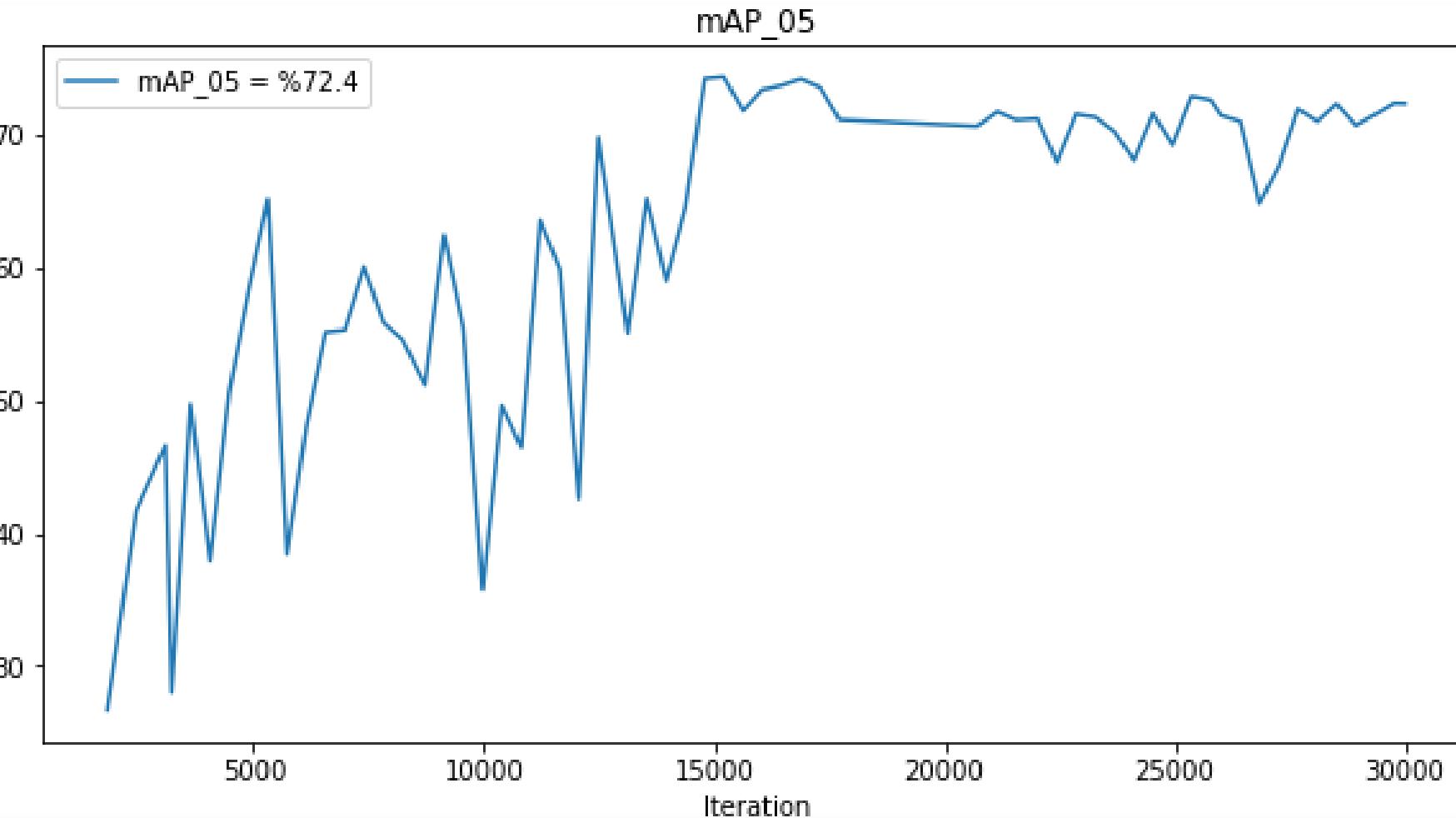
# YOLOv4 Case Study

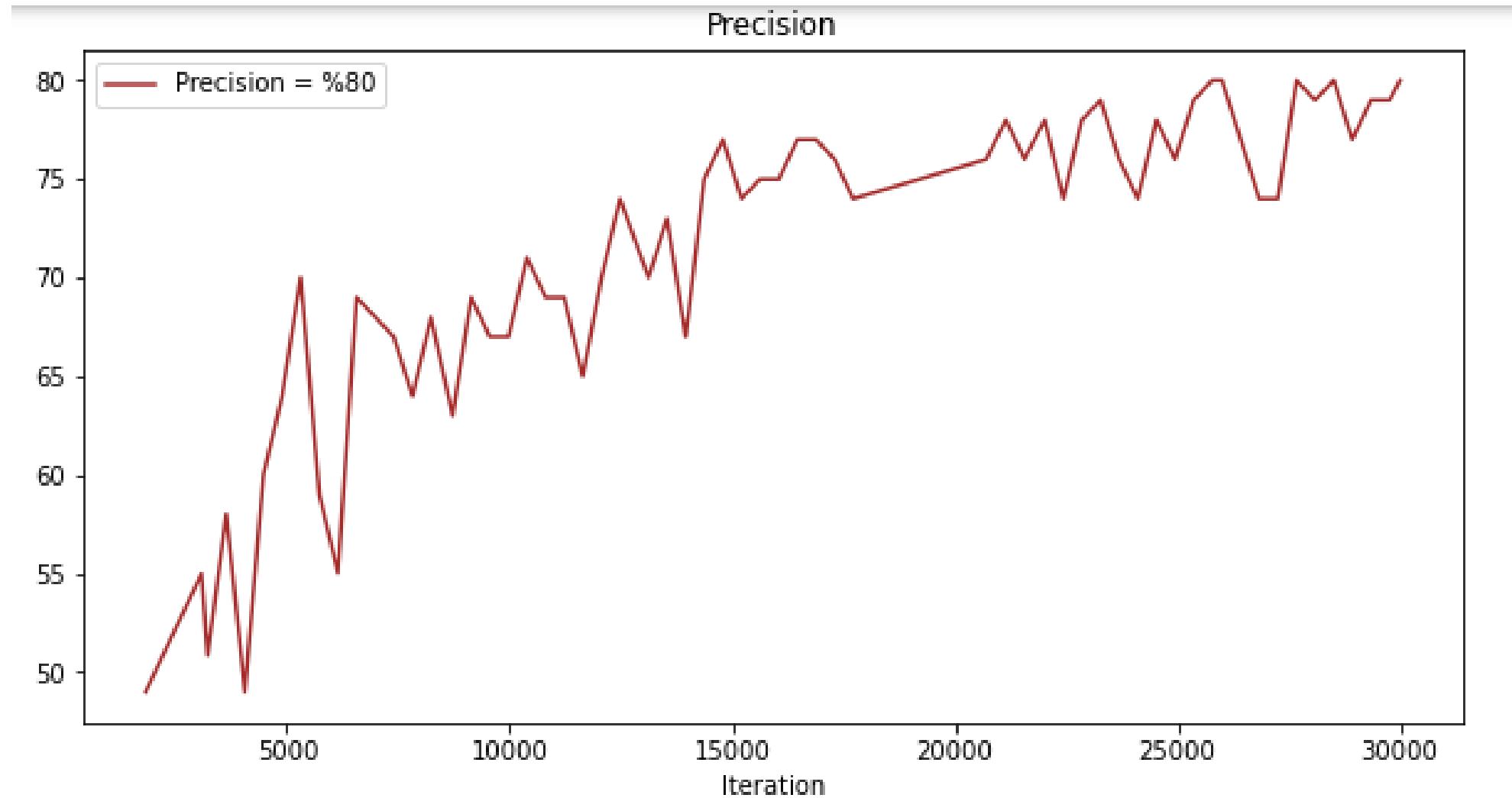
## NOK Raporu

Burak Maden

# Eğitim Metrikleri

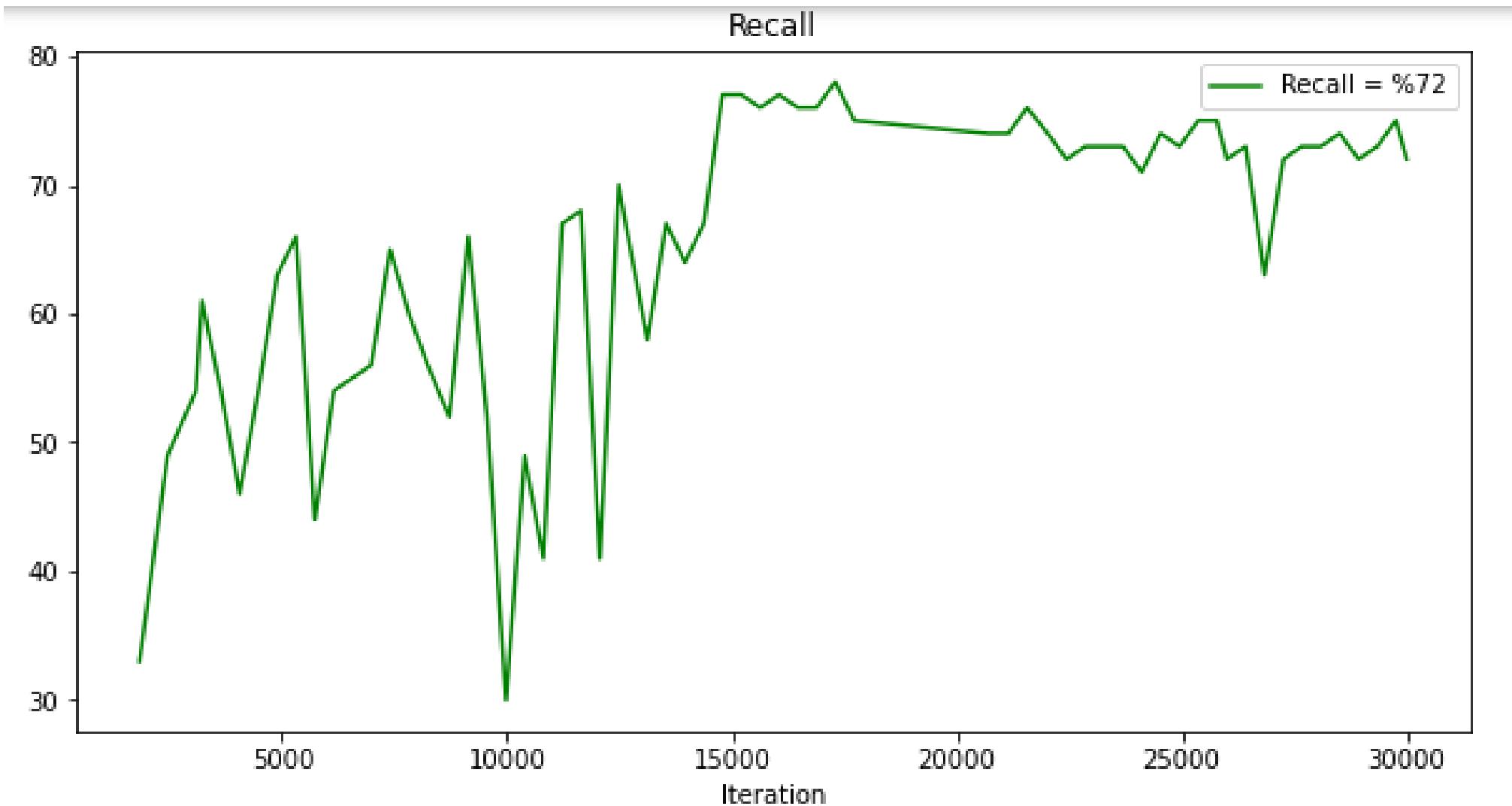
Map@0.5







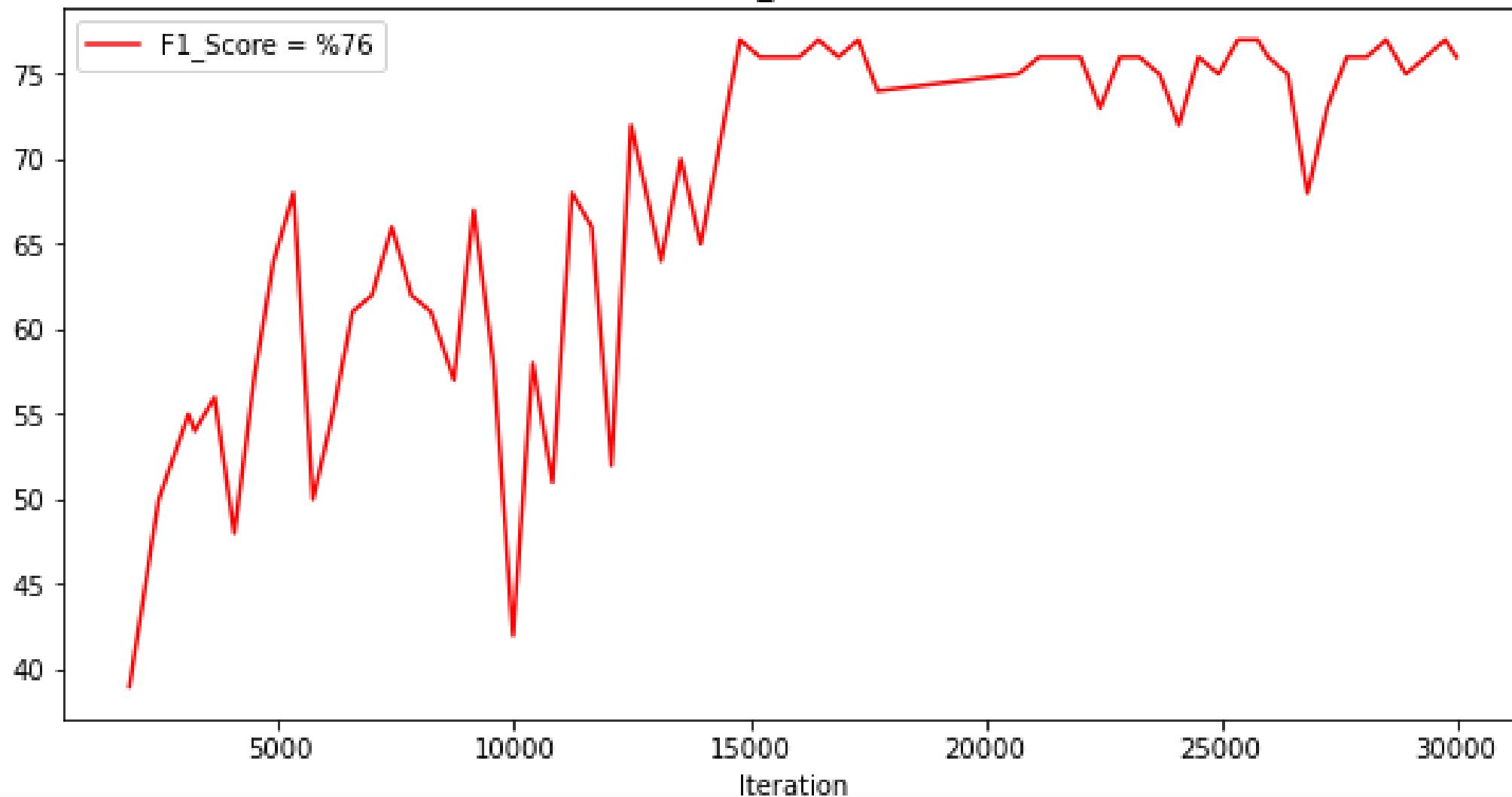
# Recall

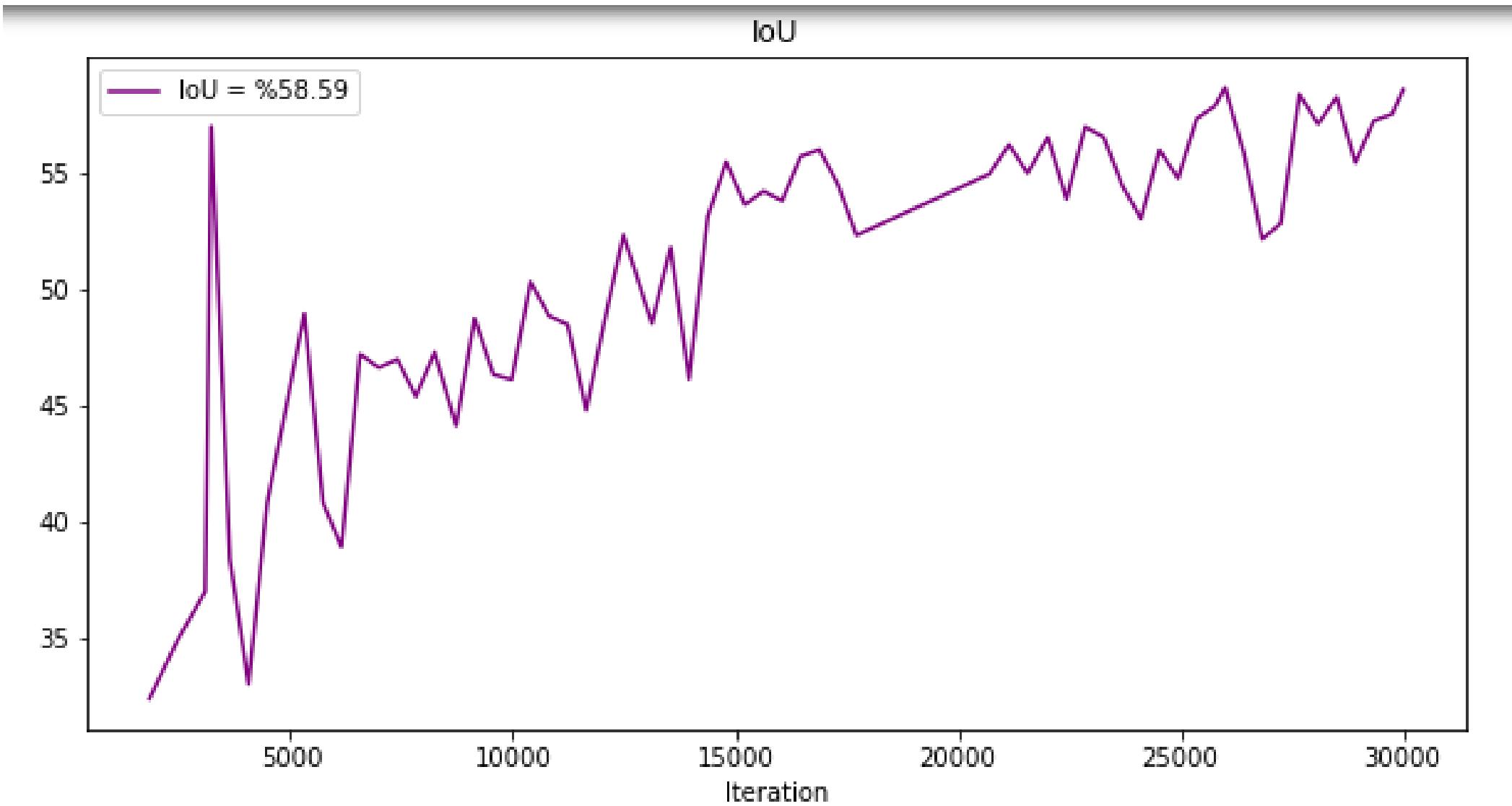




# F1-Score

F1\_Score

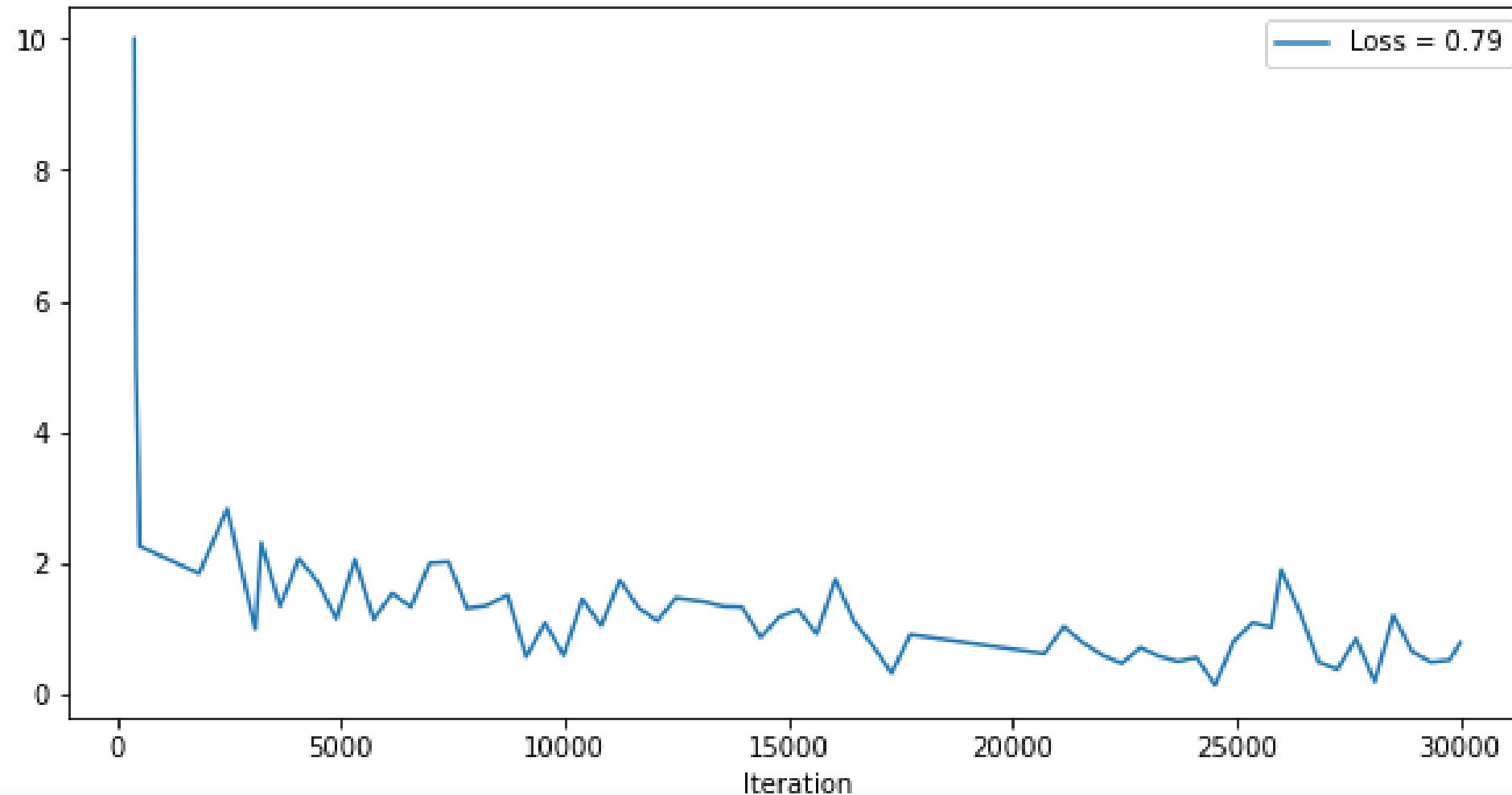






# Loss

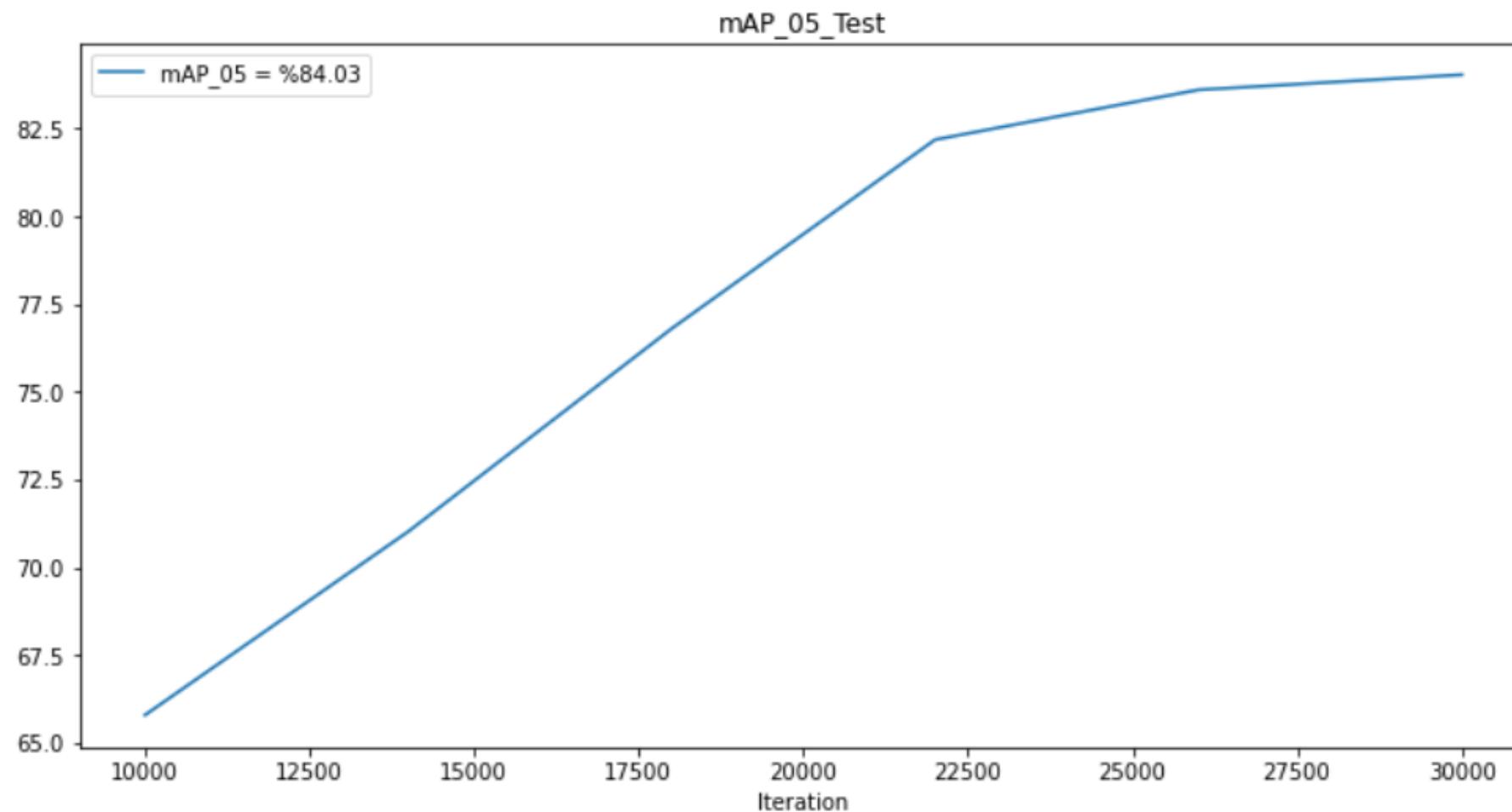
Loss



# Test Metrikleri



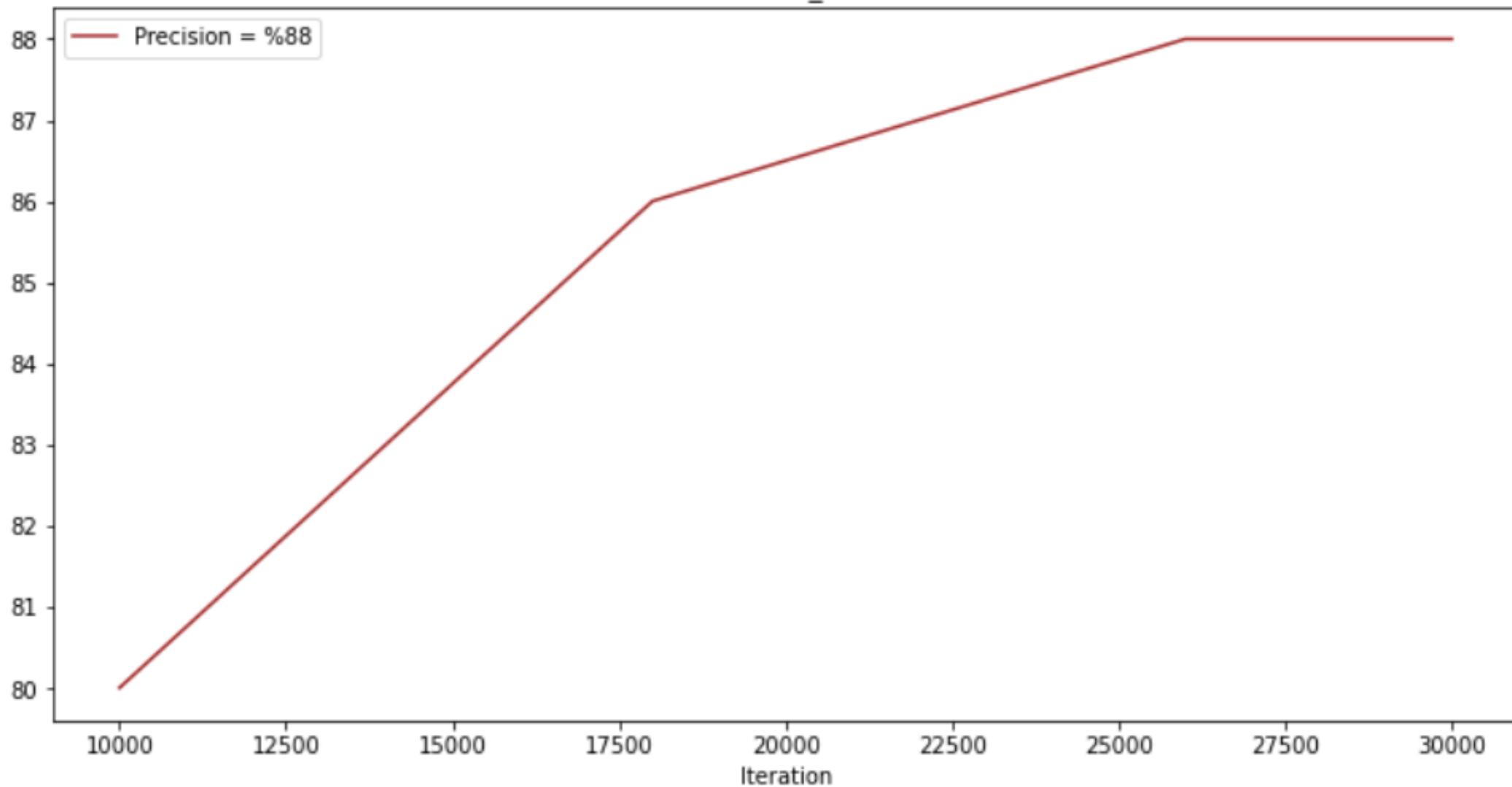
## Map@0.5\_Test





# Precision\_Test

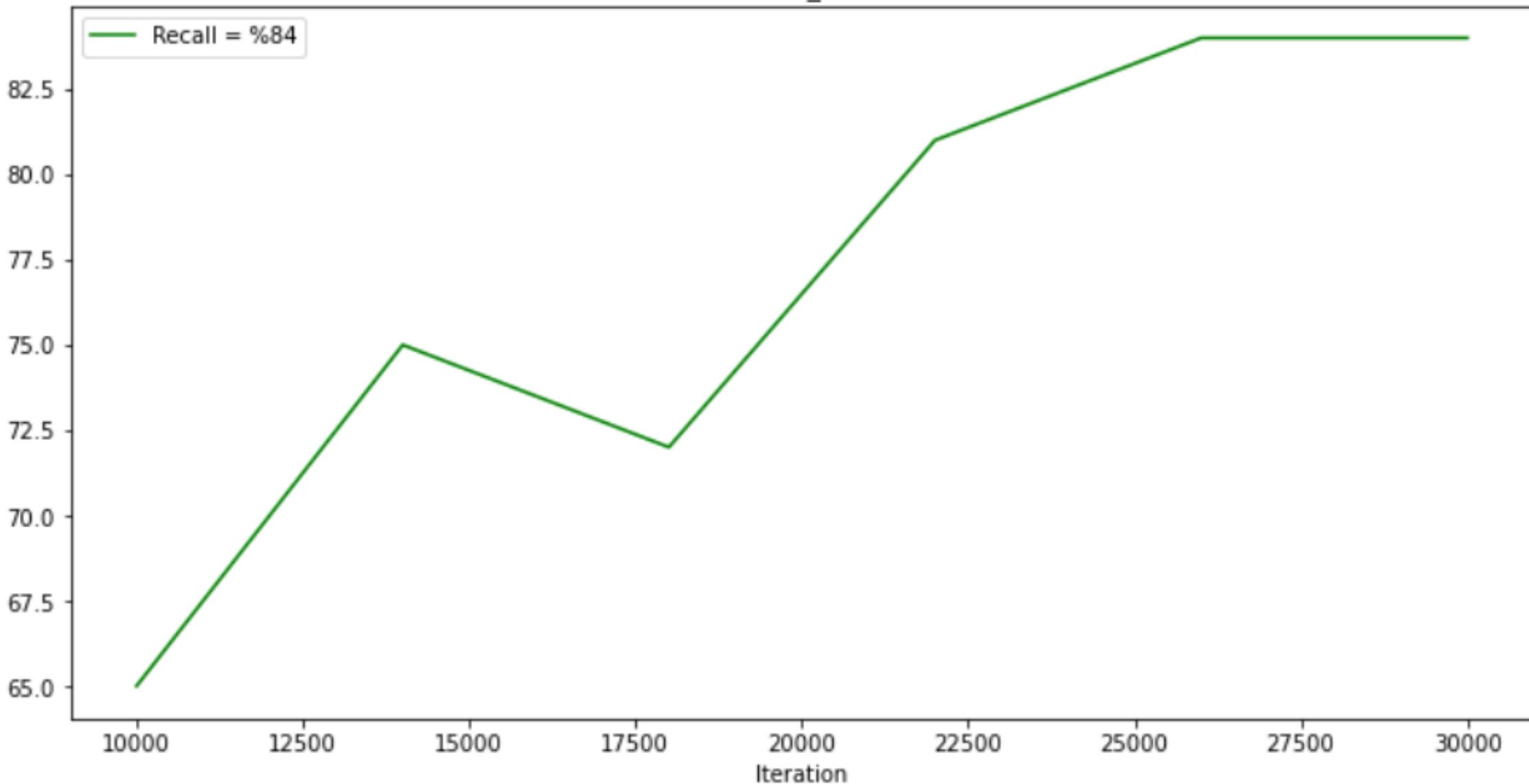
Precision\_Test





# Recall\_Test

Recall\_Test





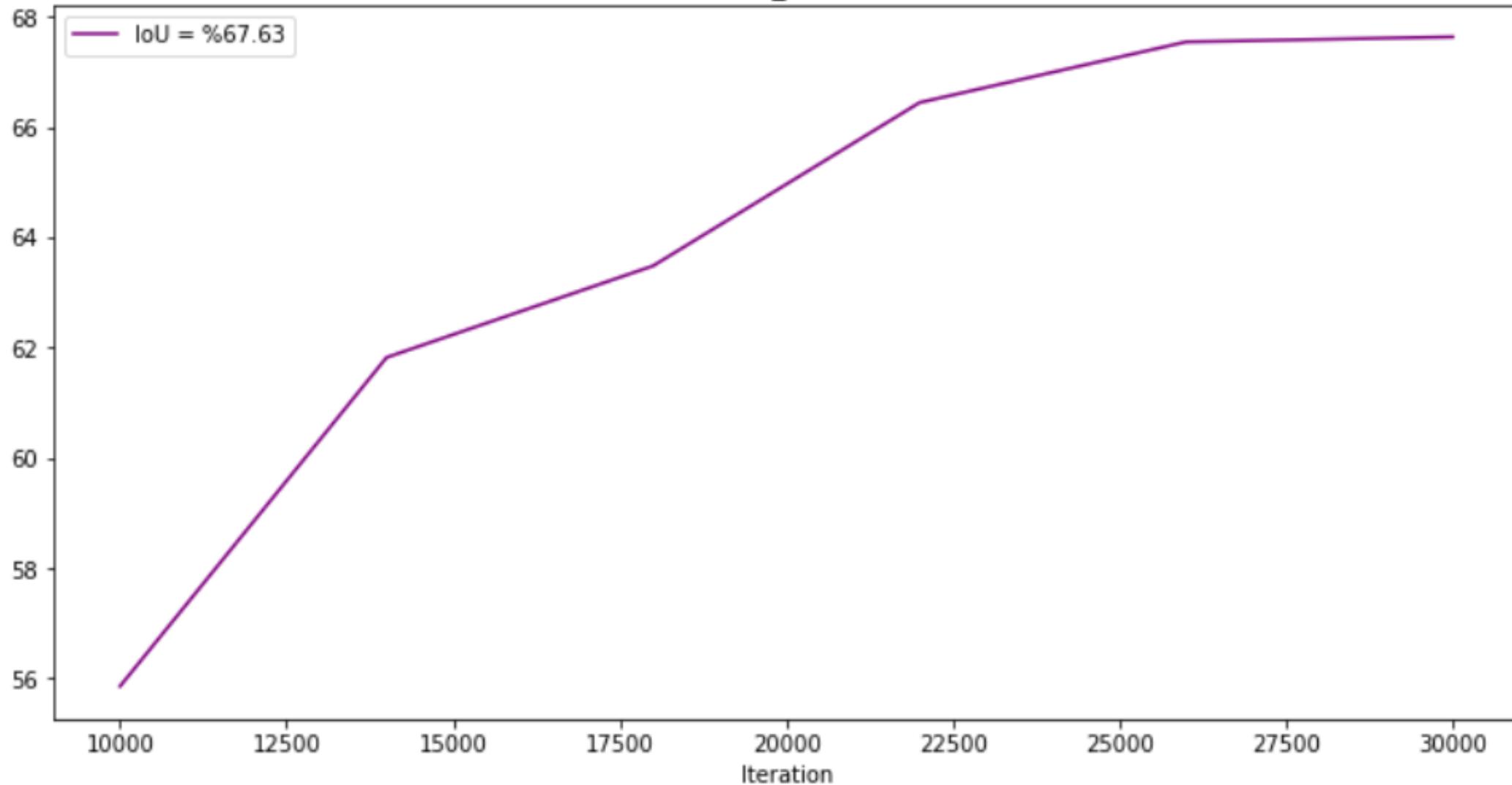
# F1-Score\_Test





# IoU\_Test

IoU\_Test



- ✓ Confusion matrisi oluşturamadığımızdan görseller üzerindeki başarısını tam olarak gözlemliyemiyoruz. İlerleyen sayfalarda kendim oluşturmaya çalıştım ama şimdilik test veri setindeki toplam etiket sayısıyla algılanan toplam etiket sayısını karşılaştırdım.
- ✓ Test setinde toplam 2750 etiket bulunmaktadır. Algılama sonucu oluşturulan box sayısı ise 2636'dır. Buradan hareketle %4.14'lük bir sapma var diyebiliriz eğer tüm etiketlerin doğru olduğundan emin olabilirsek. Bu da karmaşık bir durum ve yapılan testlerde de bazen eksik bazen fazla bazen de hiç olmayan tespitler mevcut.

	2749	2020-03-07_19-06-53	2048	1536	NOK	0	847	2046	968	2750
	2750	2020-03-05_12-46-16	2048	1536	NOK	896	909	988	976	2751
	2751	2020-02-17_14-58-08	2048	1536	NOK	0	831	2047	947	2752

Search results - (2636 hits)										
Search "NOK" (2636 hits in 1 file of 1 searched)										
D:\Download\result (1).txt (2636 hits)										
Line 9:	NOK:	93%	(left_x:	8	top_y:	773	width:	1984	height:	100)
Line 11:	NOK:	98%	(left_x:	415	top_y:	972	width:	116	height:	38)
Line 13:	NOK:	75%	(left_x:	-20	top_y:	718	width:	2037	height:	71)
Line 15:	NOK:	52%	(left_x:	-52	top_y:	646	width:	2098	height:	81)
Line 17:	NOK:	65%	(left_x:	33	top_y:	885	width:	2012	height:	93)

- ✓ Fakat kayıt olarak toplam TP, FP ve FN değerlerini alabiliyorum. Tek sınıfı da olduğu için sonraki sayfadaki confusion matrisini oluşturabiliriz. TN değerini bilmediğimden «0» mı almamızı emin değilim.

```
Allocate additional workspace_size = 52.43 MB
Loading weights from /content/drive/MyDrive/darknet/backup/custom-yolov4-detector_final.weights...
seen 64, trained: 360 K-images (5 Kilo-batches_64)
Done! Loaded 162 layers from weights-file

calculation mAP (mean average precision)...
2088
detections_count = 4037, unique_truth_count = 2750
class_id = 0, name = NOK, ap = 84.03%           (TP = 2317, FP = 319)

for conf_thresh = 0.25, precision = 0.88, recall = 0.84, F1-score = 0.86
for conf_thresh = 0.25, TP = 2317, FP = 319, FN = 433, average IoU = 67.63 %

IoU threshold = 50 %, used Area-Under-Curve for each unique Recall
mean average precision (mAP@0.50) = 0.840292, or 84.03 %
Total Detection Time: 690 Seconds
```

1. Objə vardır ve model var olduğunu bildirir. (**TP**)
2. Objə yoktur ve model olmadığını söyler. (**TN**)
3. Objə yoktur fakat model var olduğunu söyler. (**FP**)
4. Objə vardır fakat model olmadığını söyler. (**FN**)

**TN** = 0 kabul edersek;

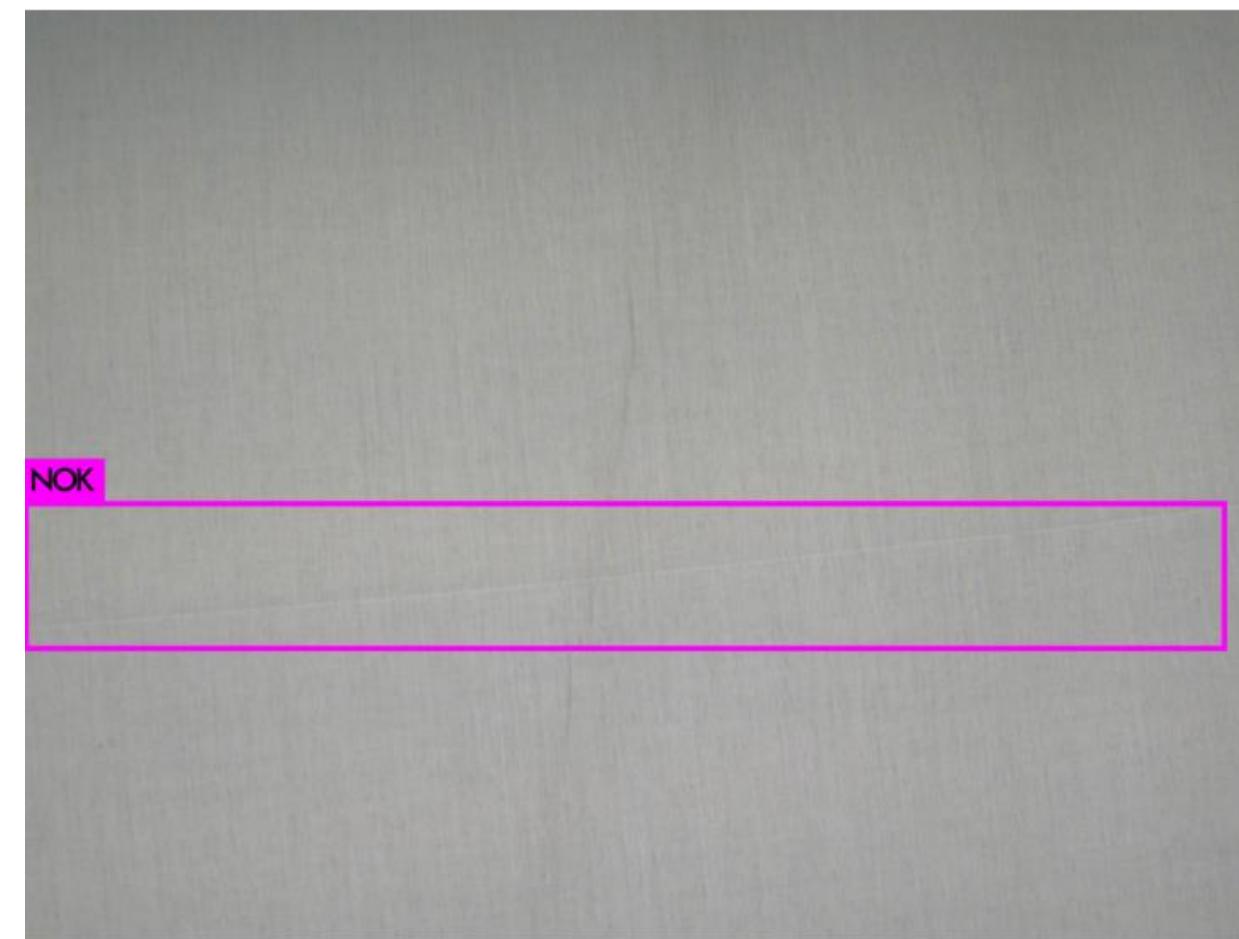
- Gerçekte olmayan 319 tane tespit yapılmış.
- Gerçekte var olan 2750 etiketten 433'ü bulunamamış.

		TAHMİN		<b>TOPLAM</b>
		<b>YOK</b>	<b>VAR</b>	
<b>GERÇEK</b>	<b>YOK</b>	<b>TN</b> ?	<b>FP</b> 319	?
	<b>VAR</b>	<b>FN</b> 433	<b>TP</b> 2317	2750
		<b>TOPLAM</b>	?	2636

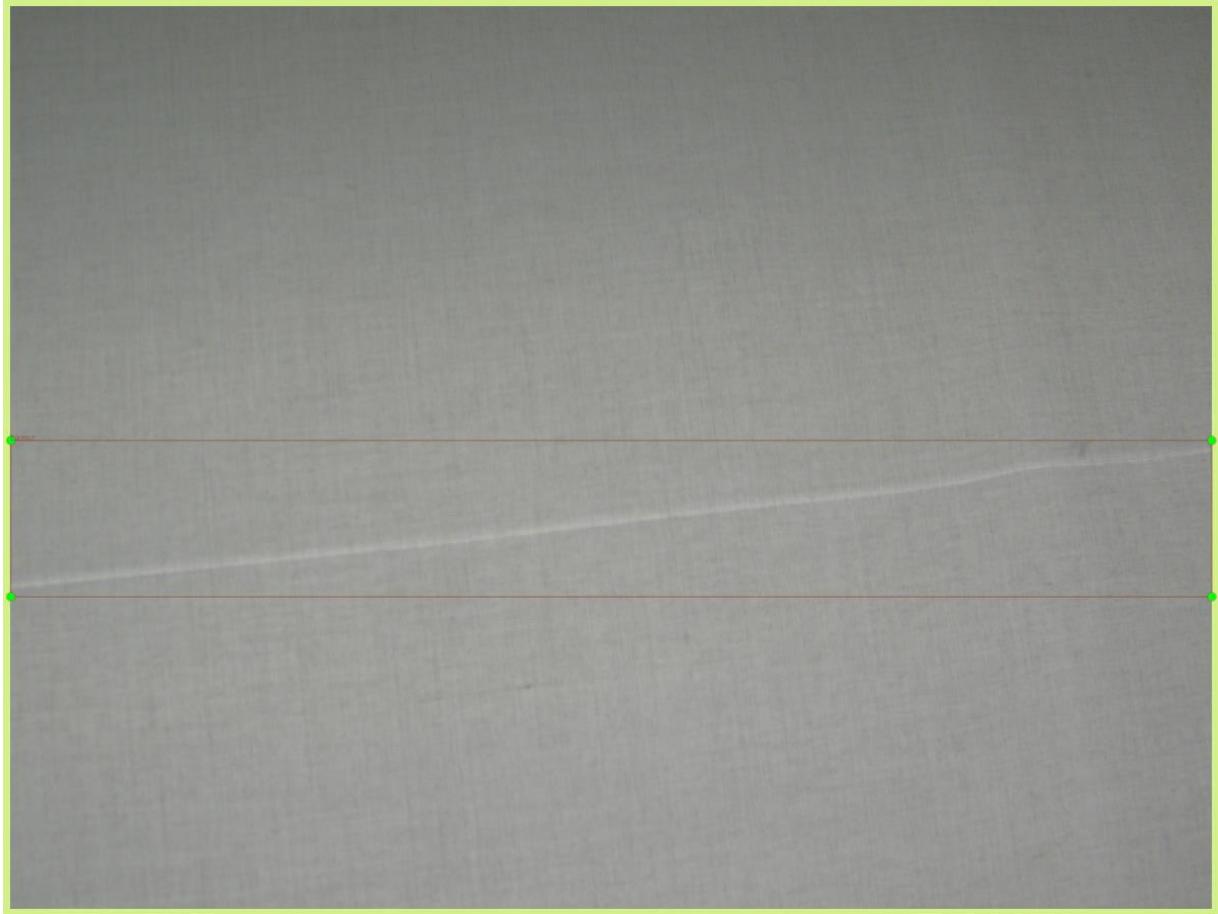
## Asıl Veri



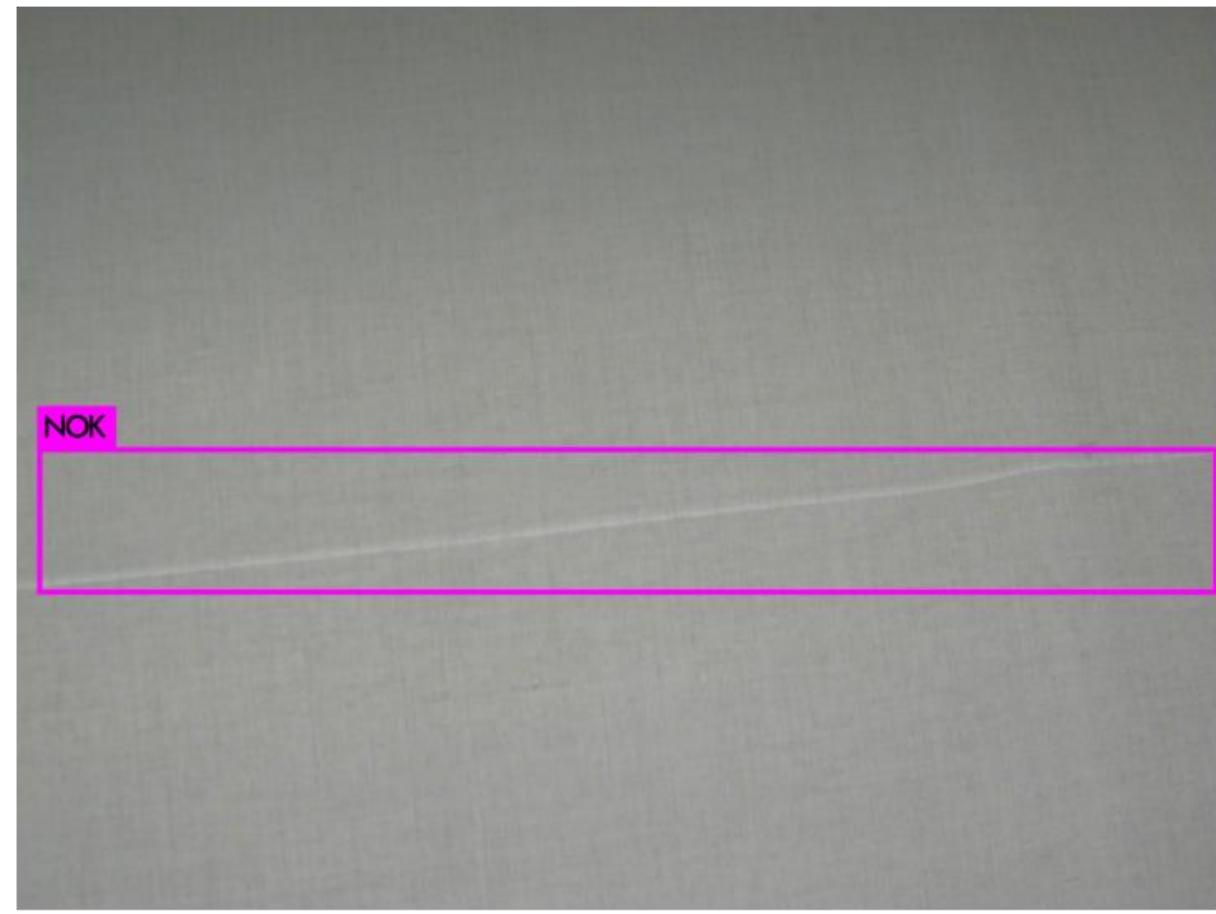
## YOLOv4 Sonucu



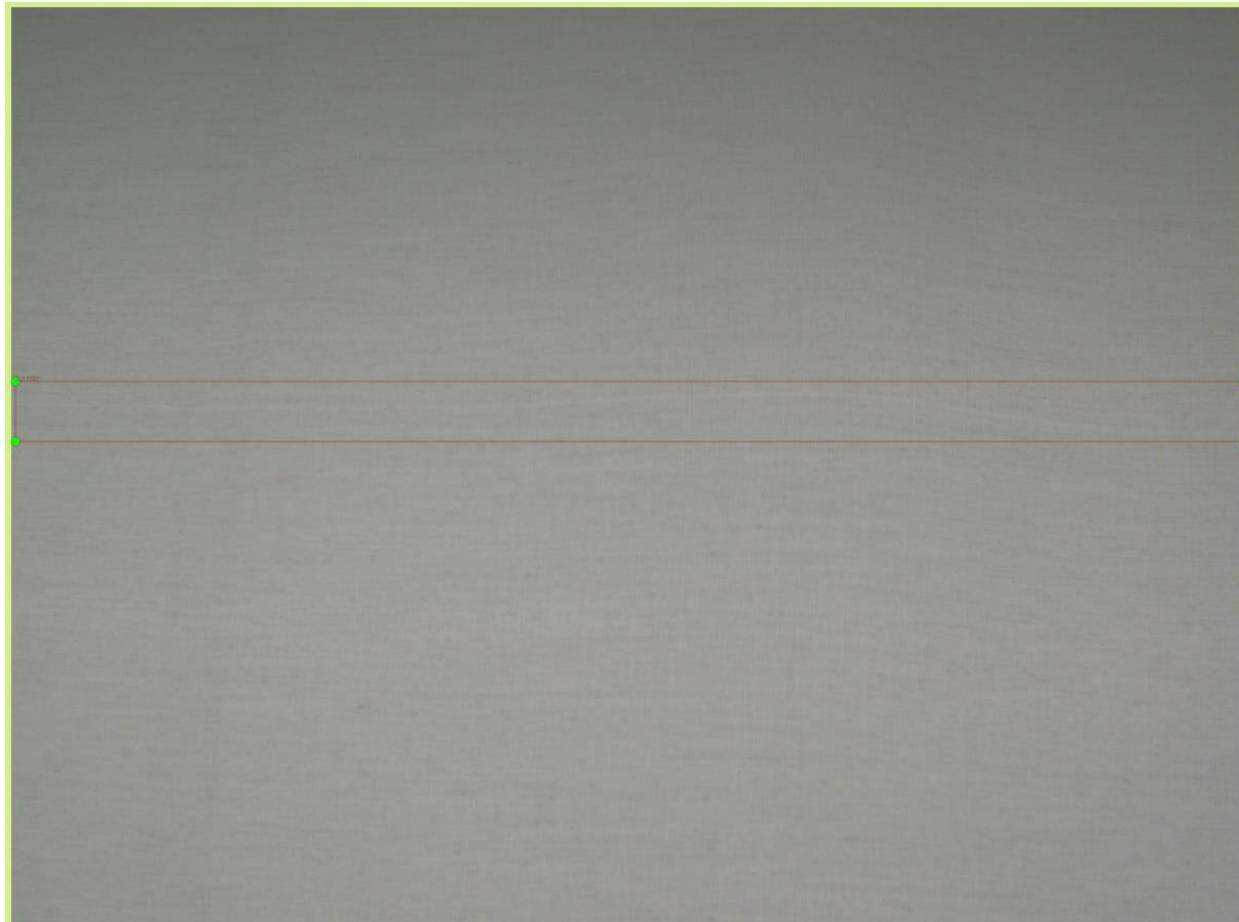
## Asıl Veri



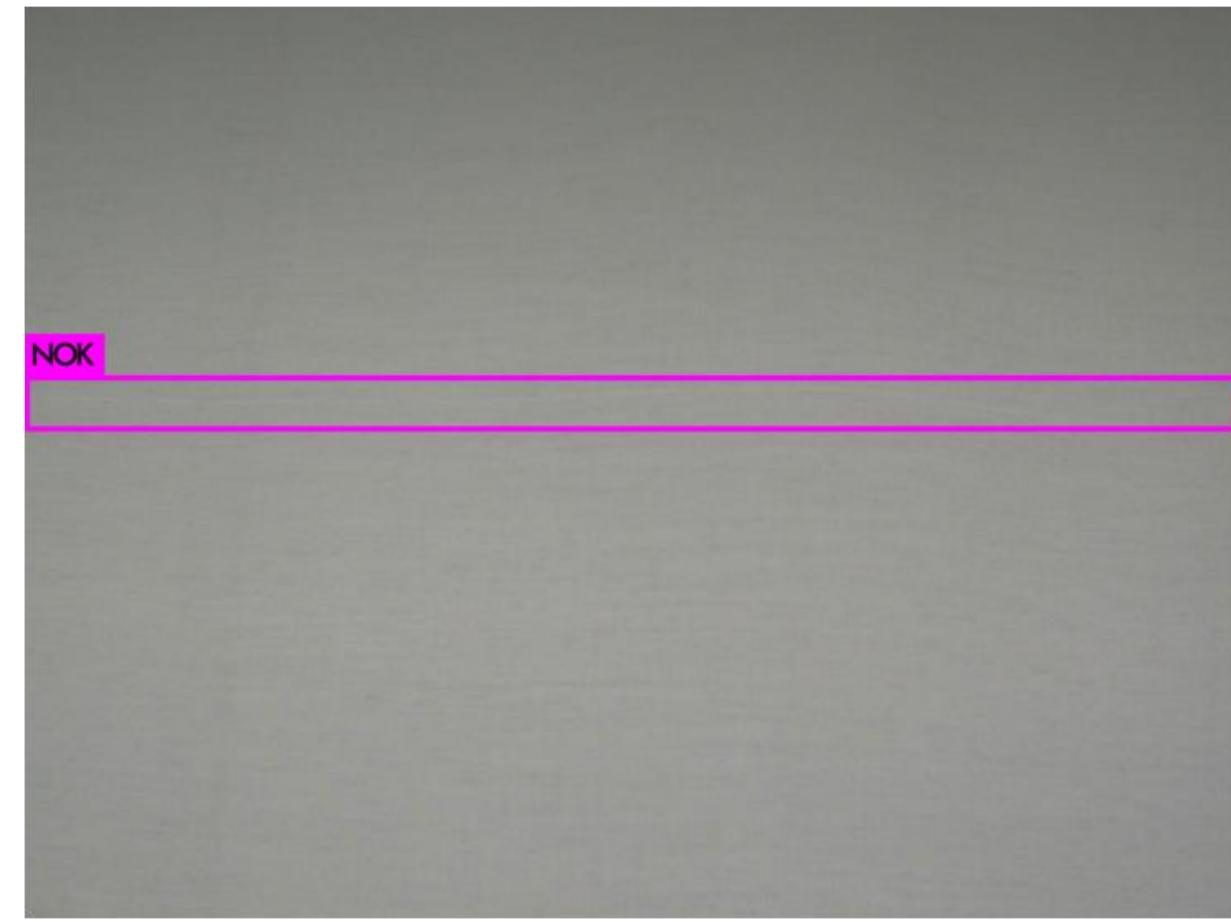
## YOLOv4 Sonucu



## Asıl Veri



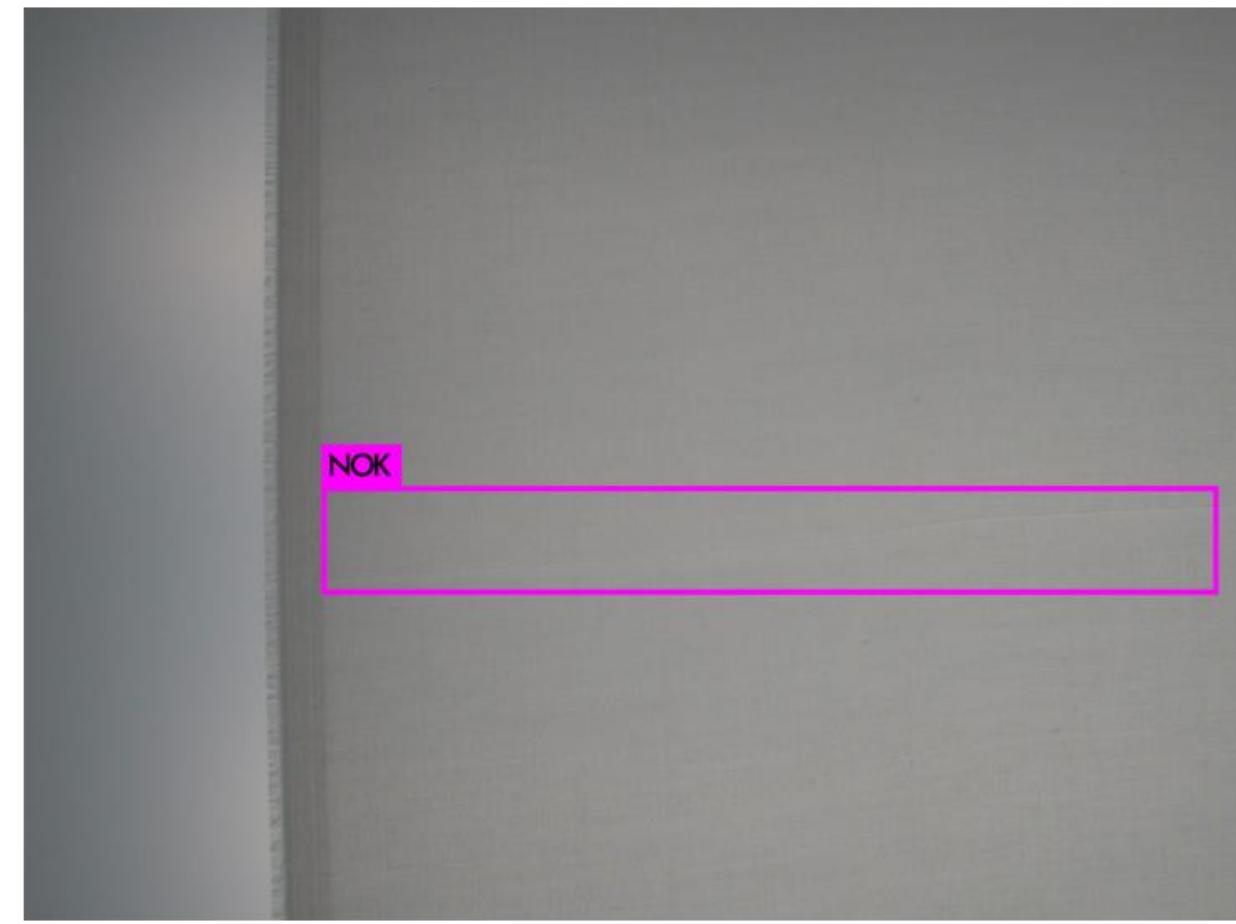
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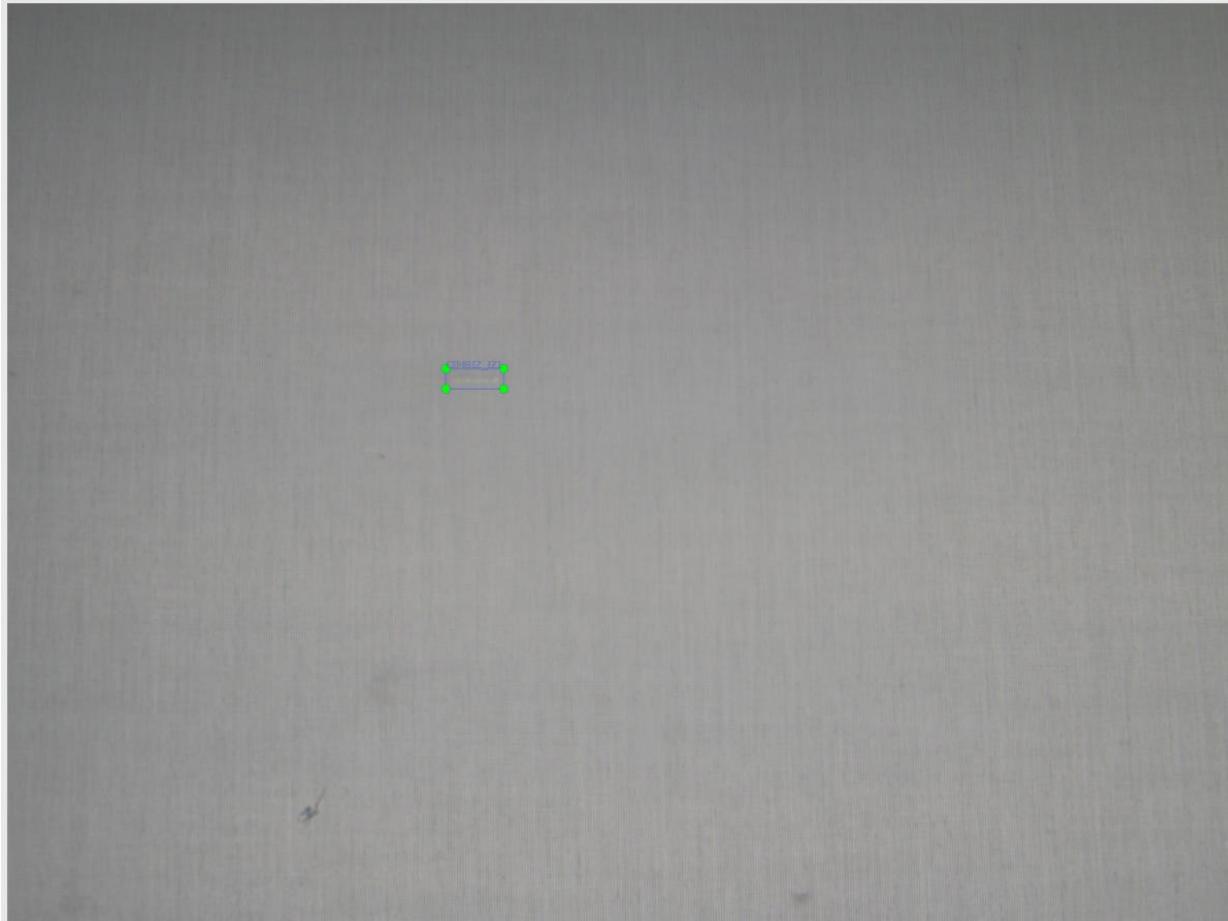
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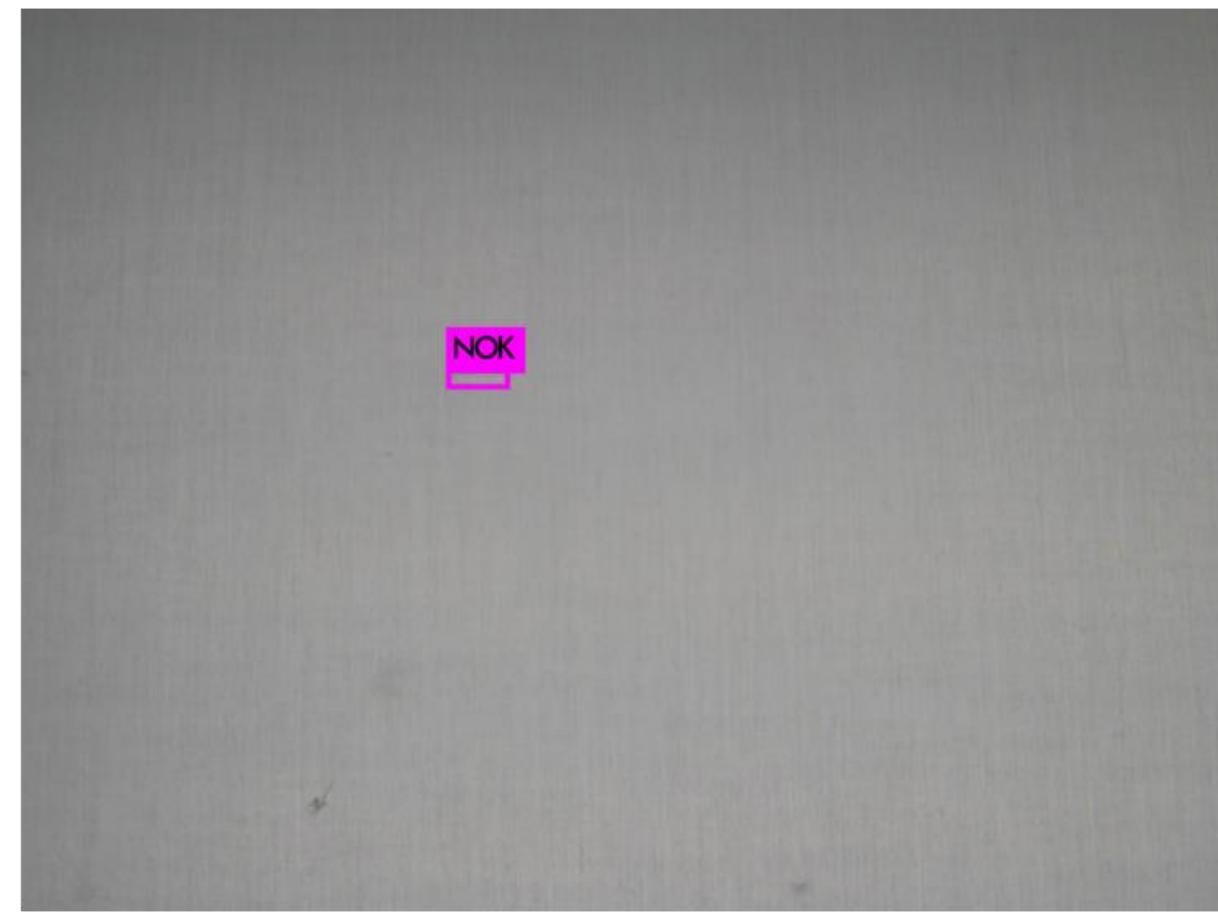
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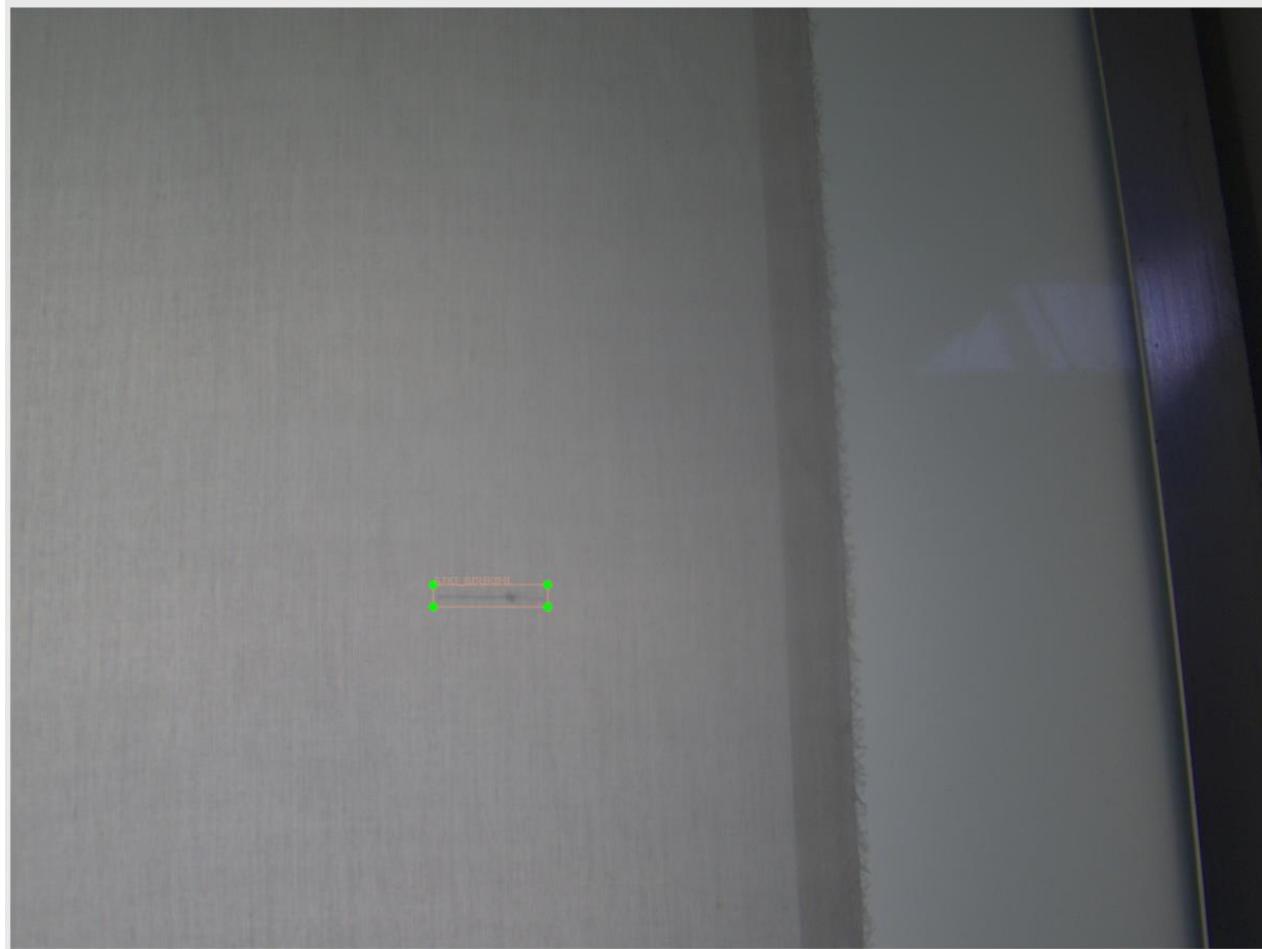
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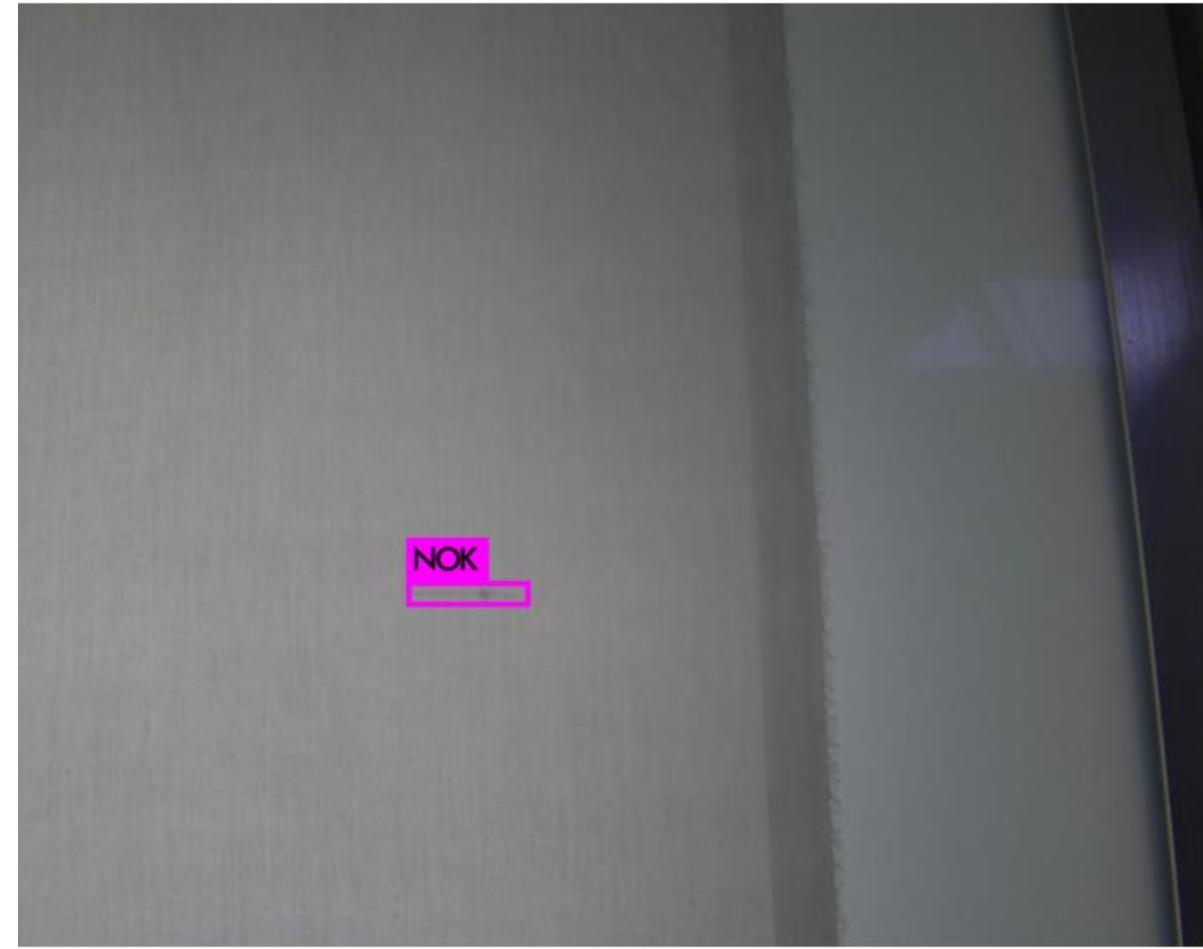
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## Asıl Veri



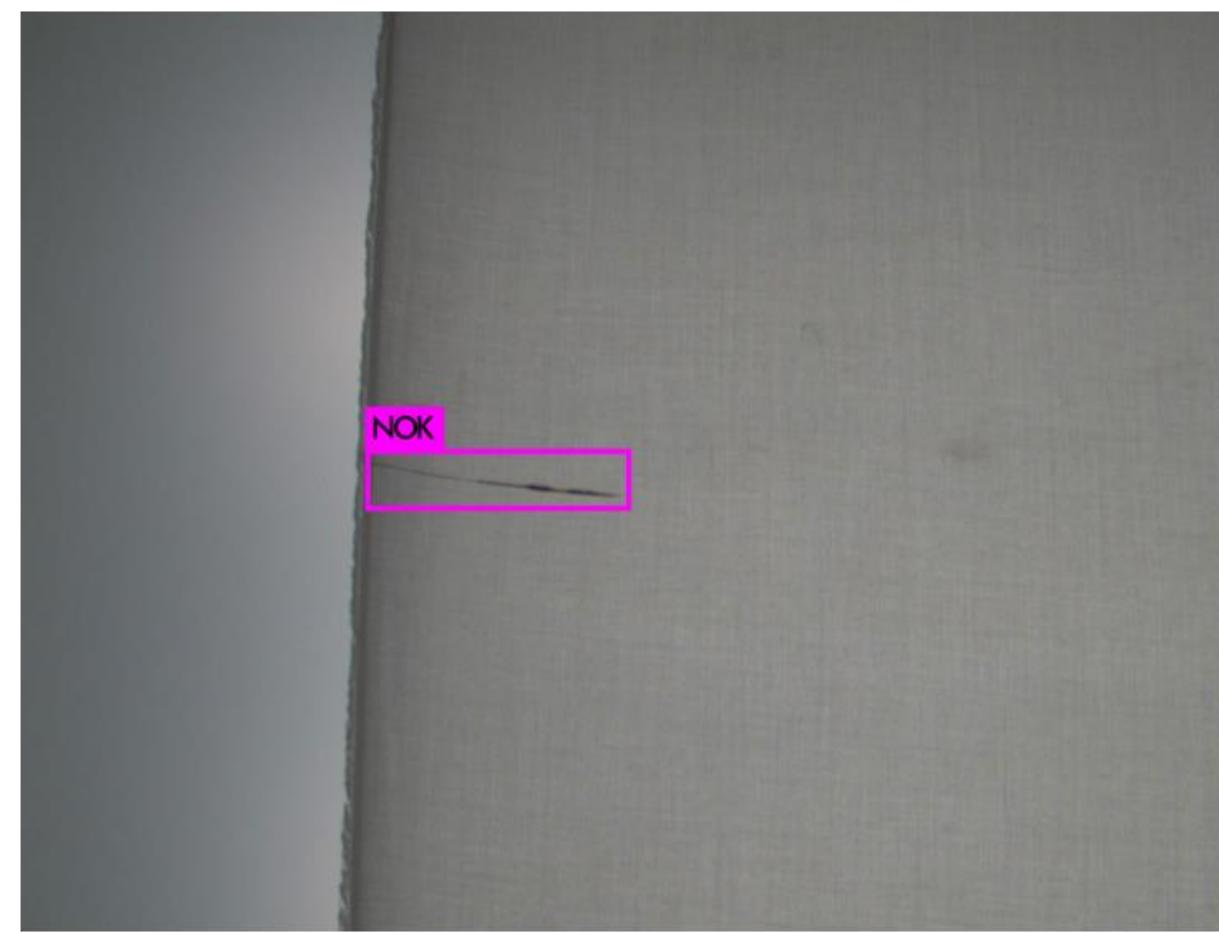
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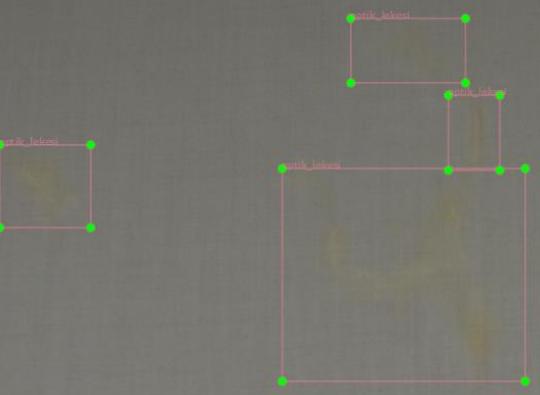
## Asıl Veri



## YOLOv4 Sonucu



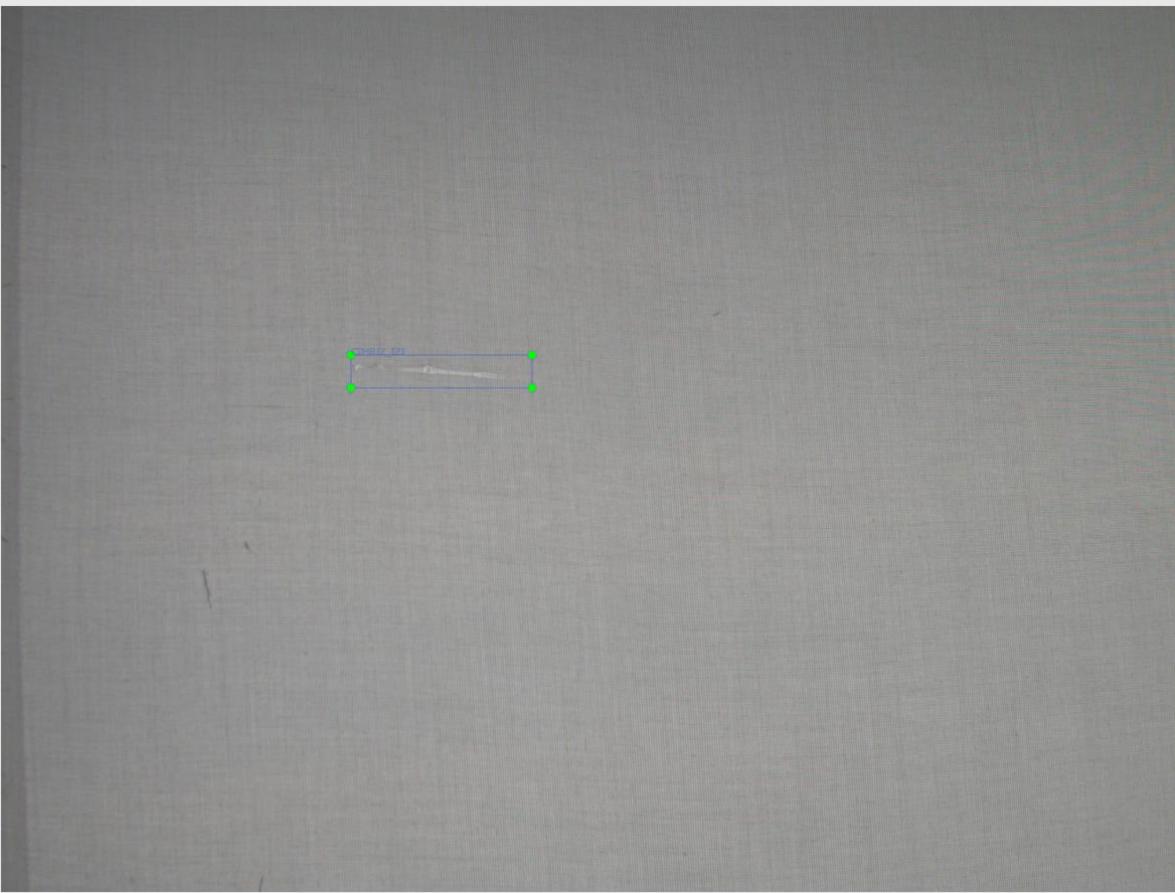
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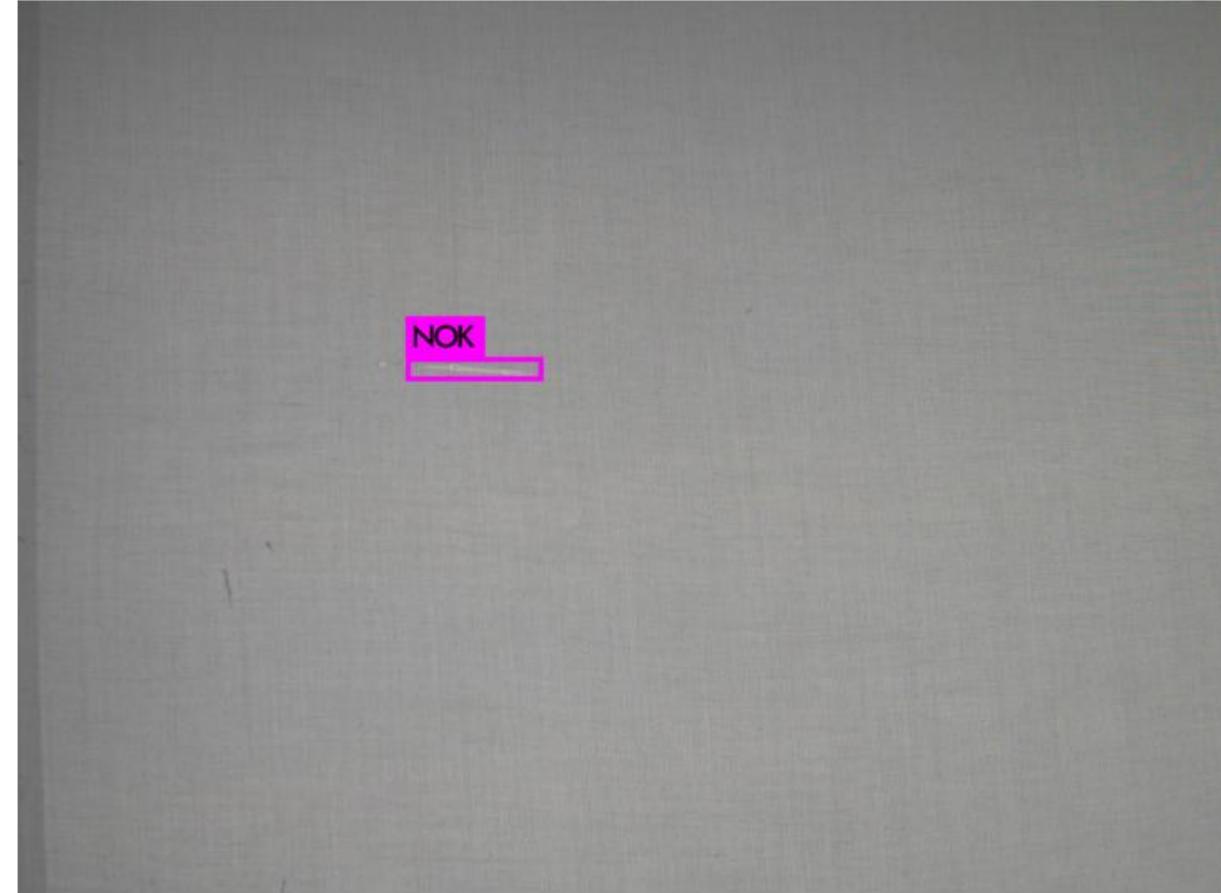
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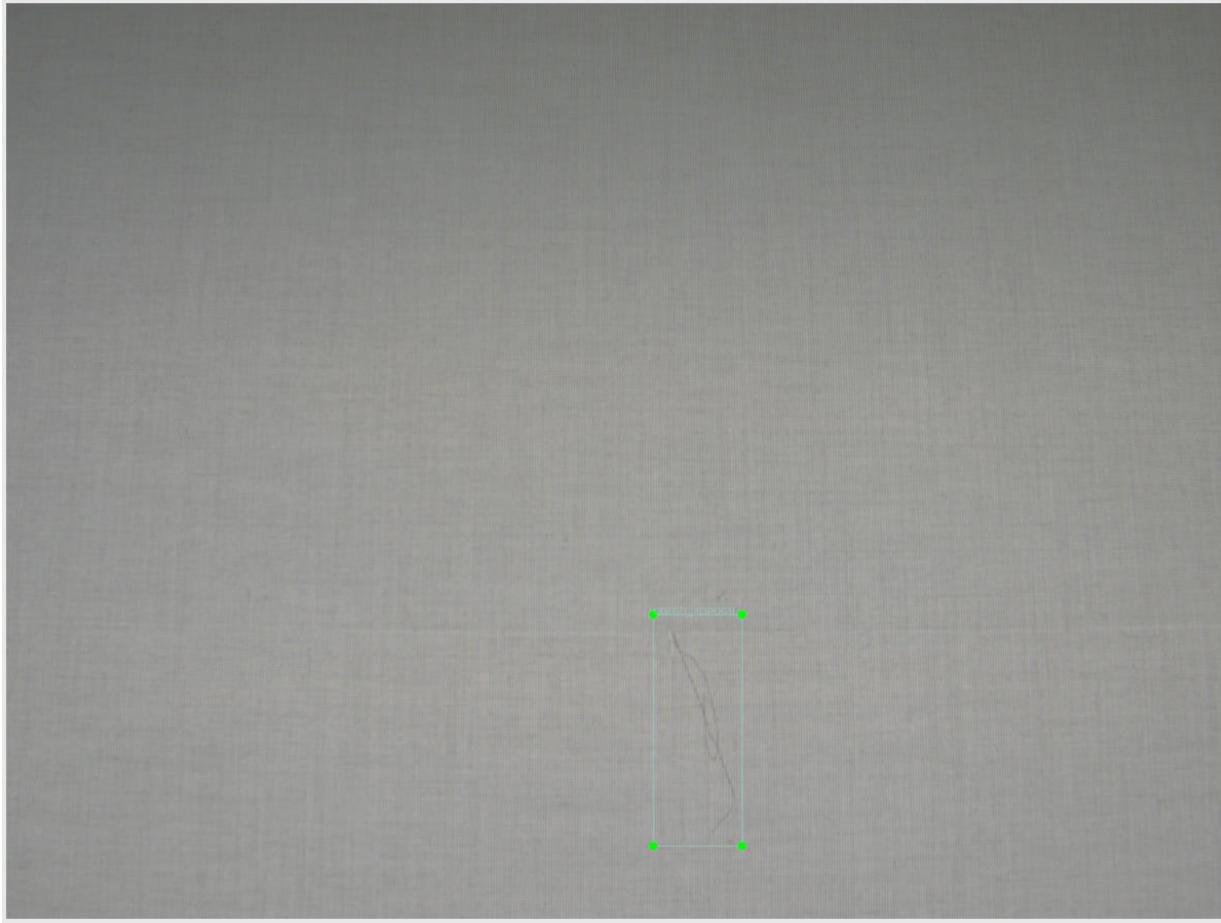
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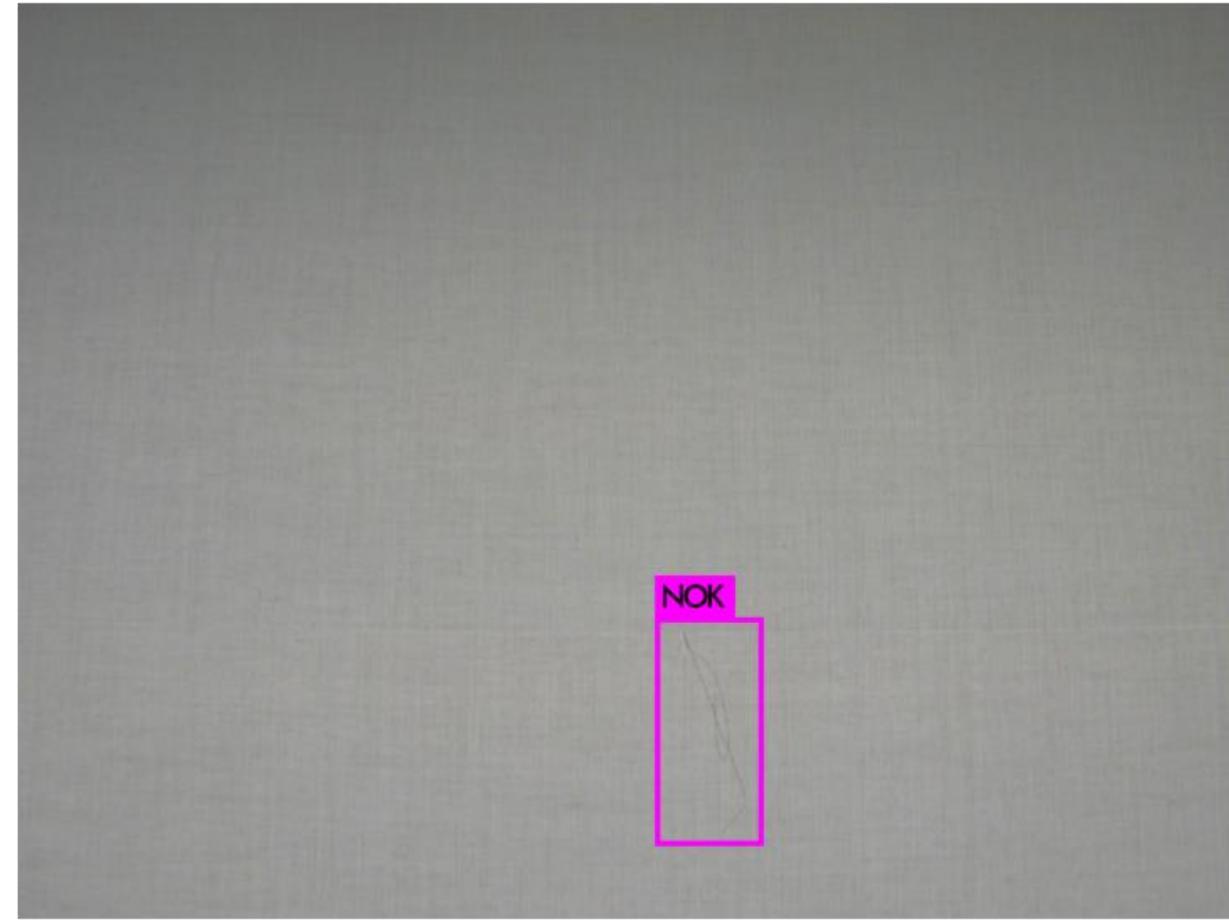
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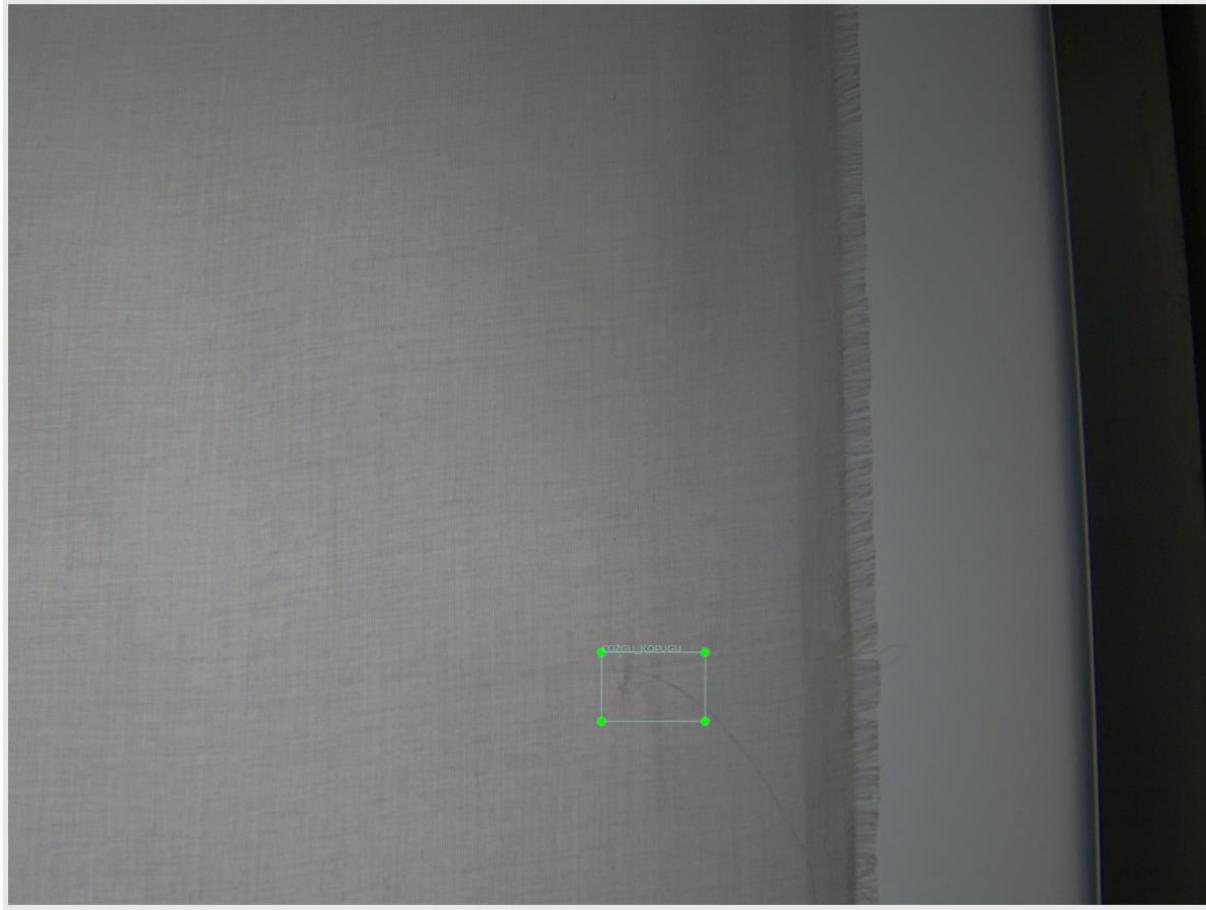
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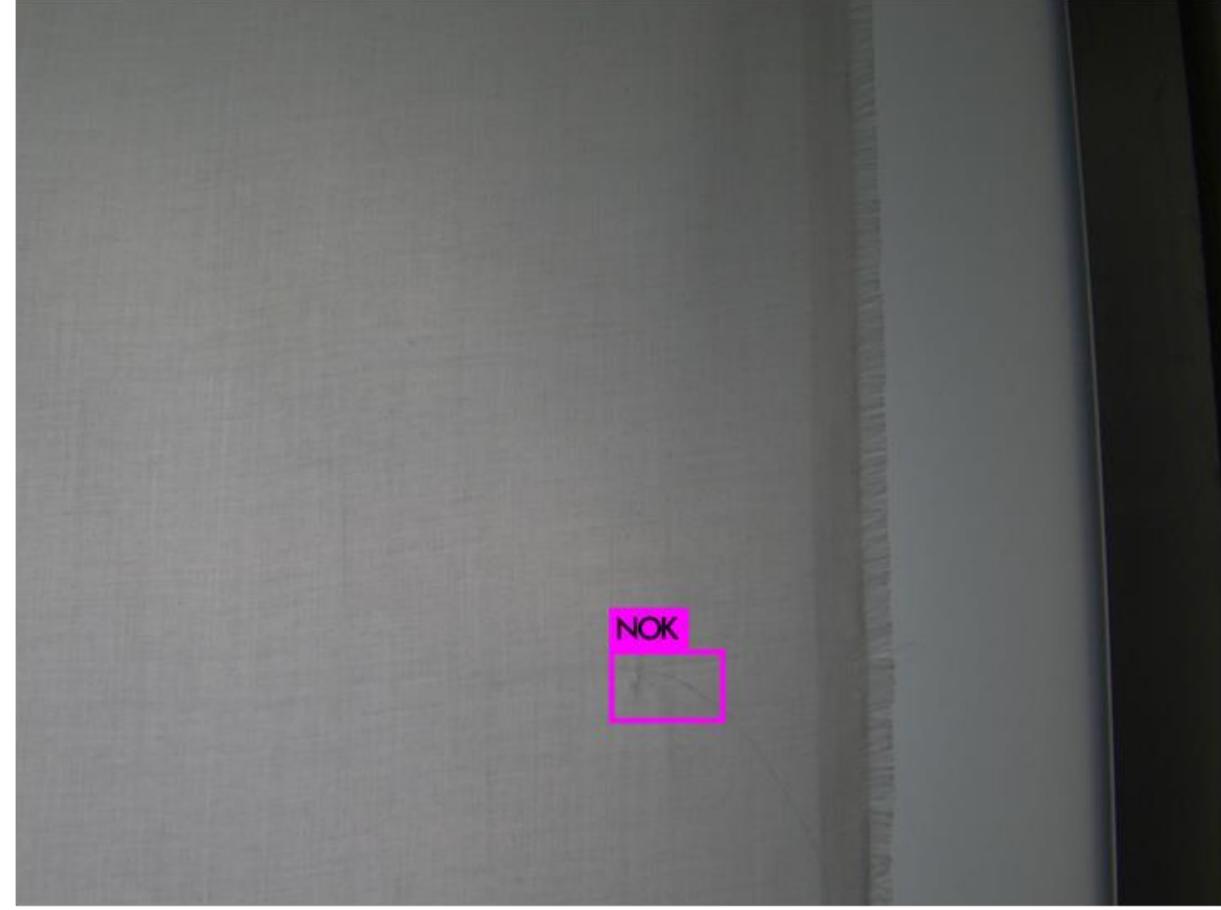
## YOLOv4 Sonucu



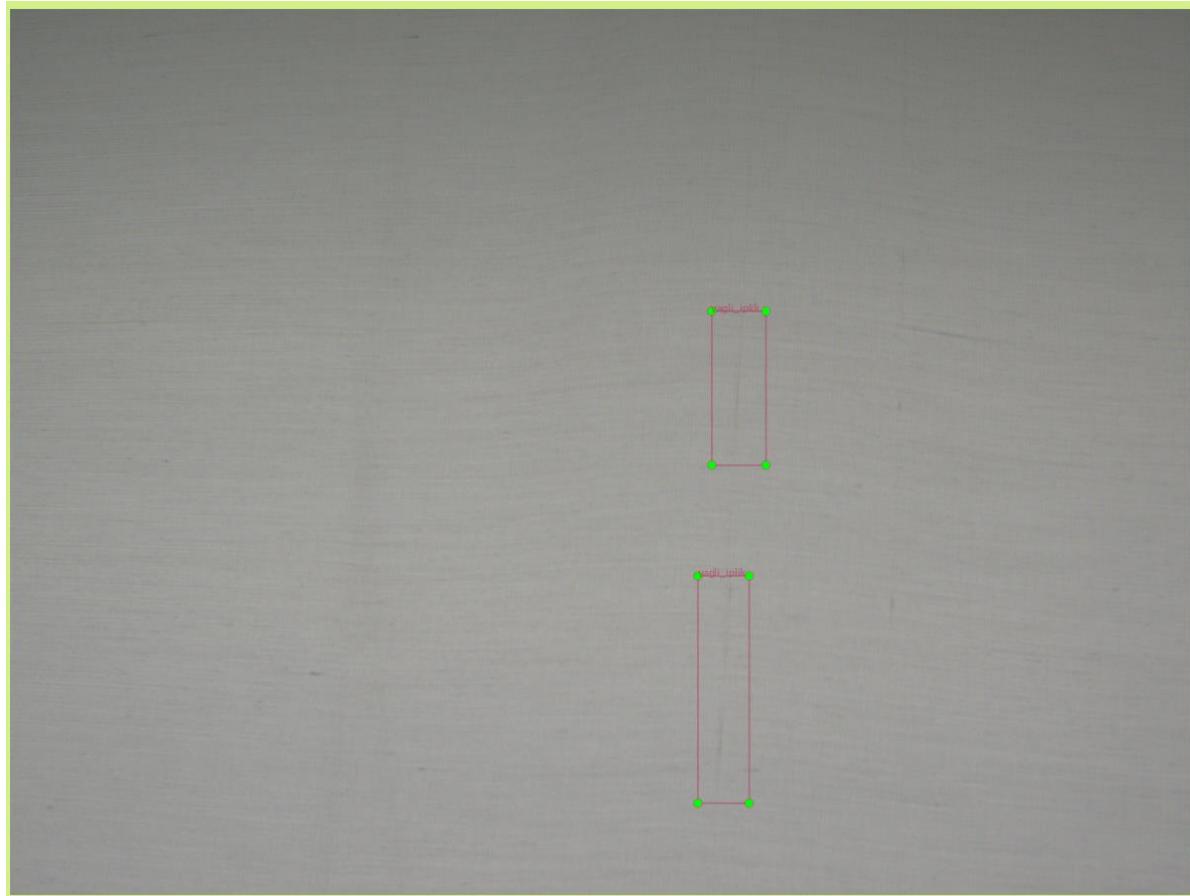
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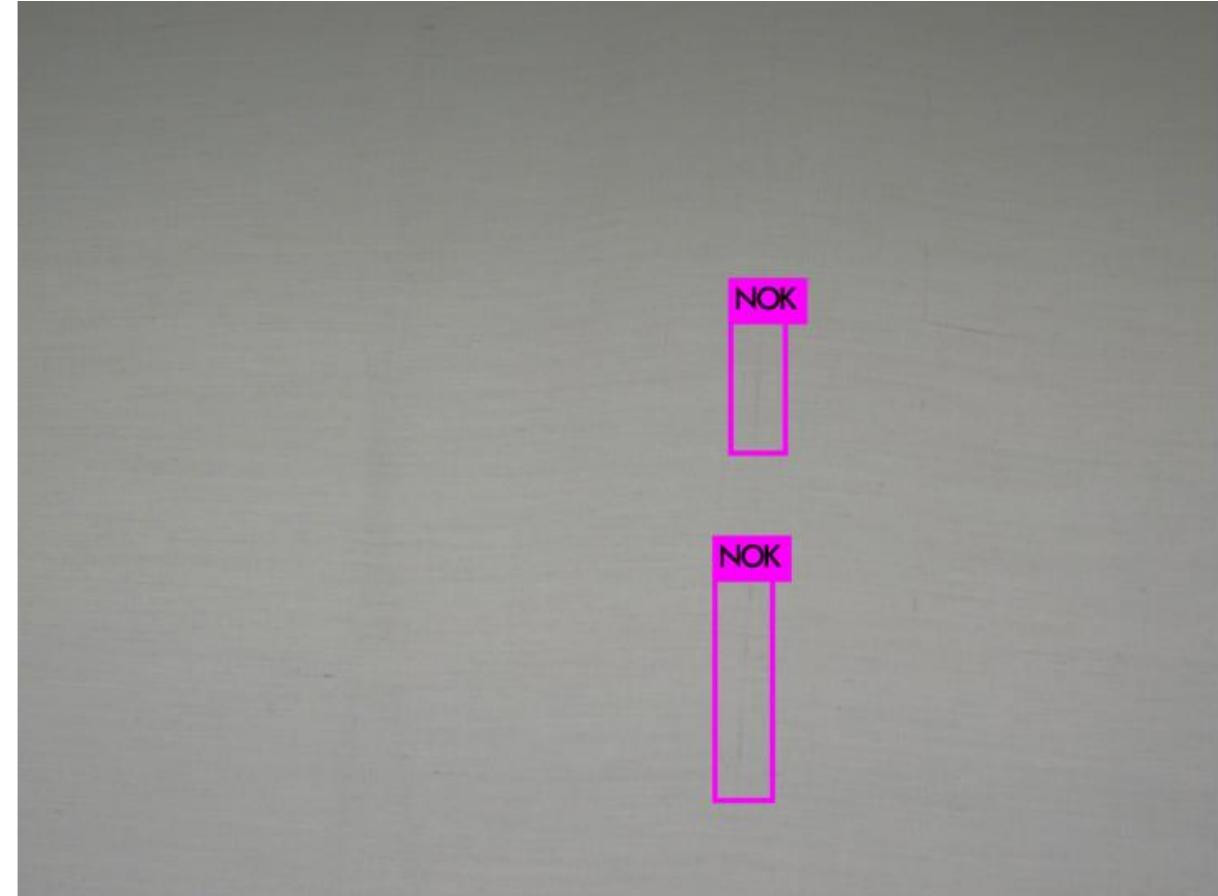
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## Asıl Veri



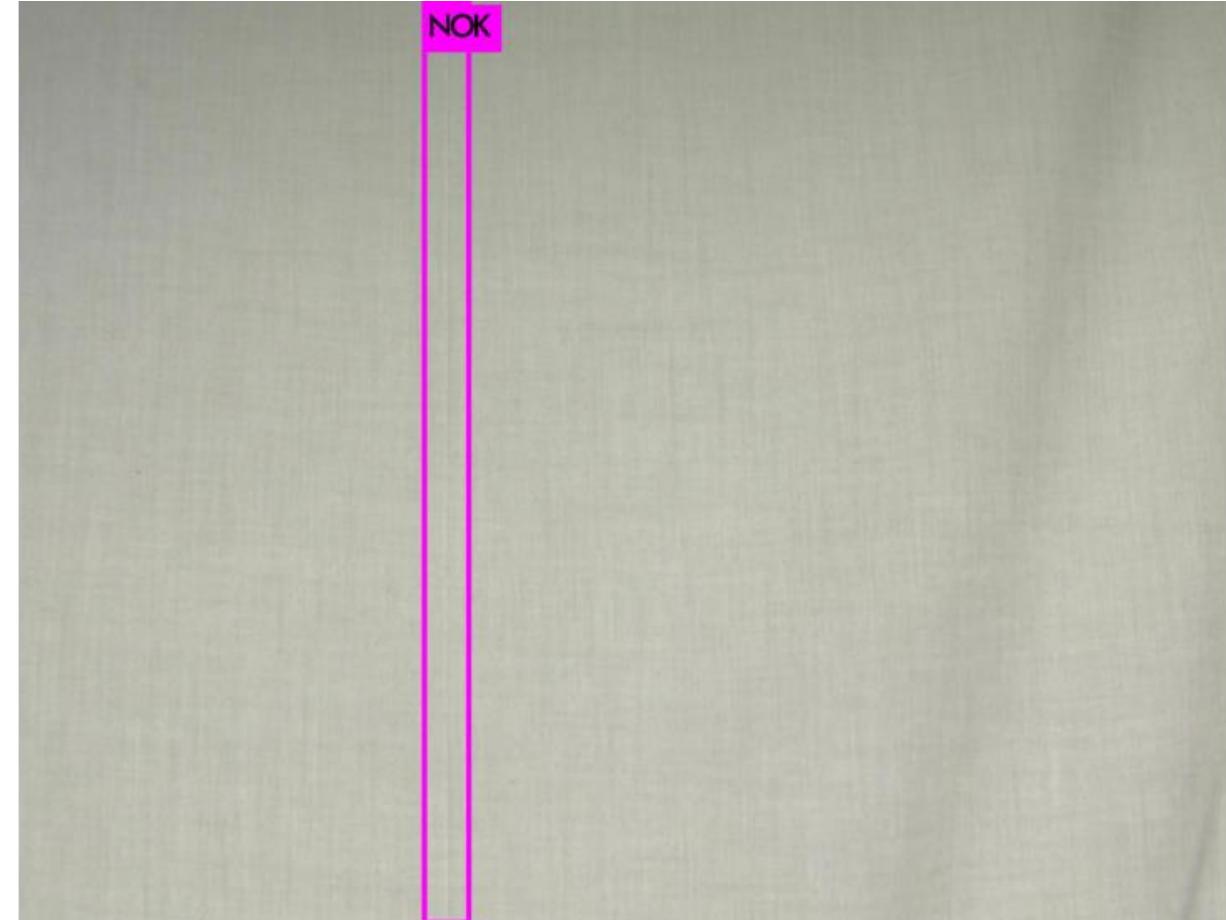
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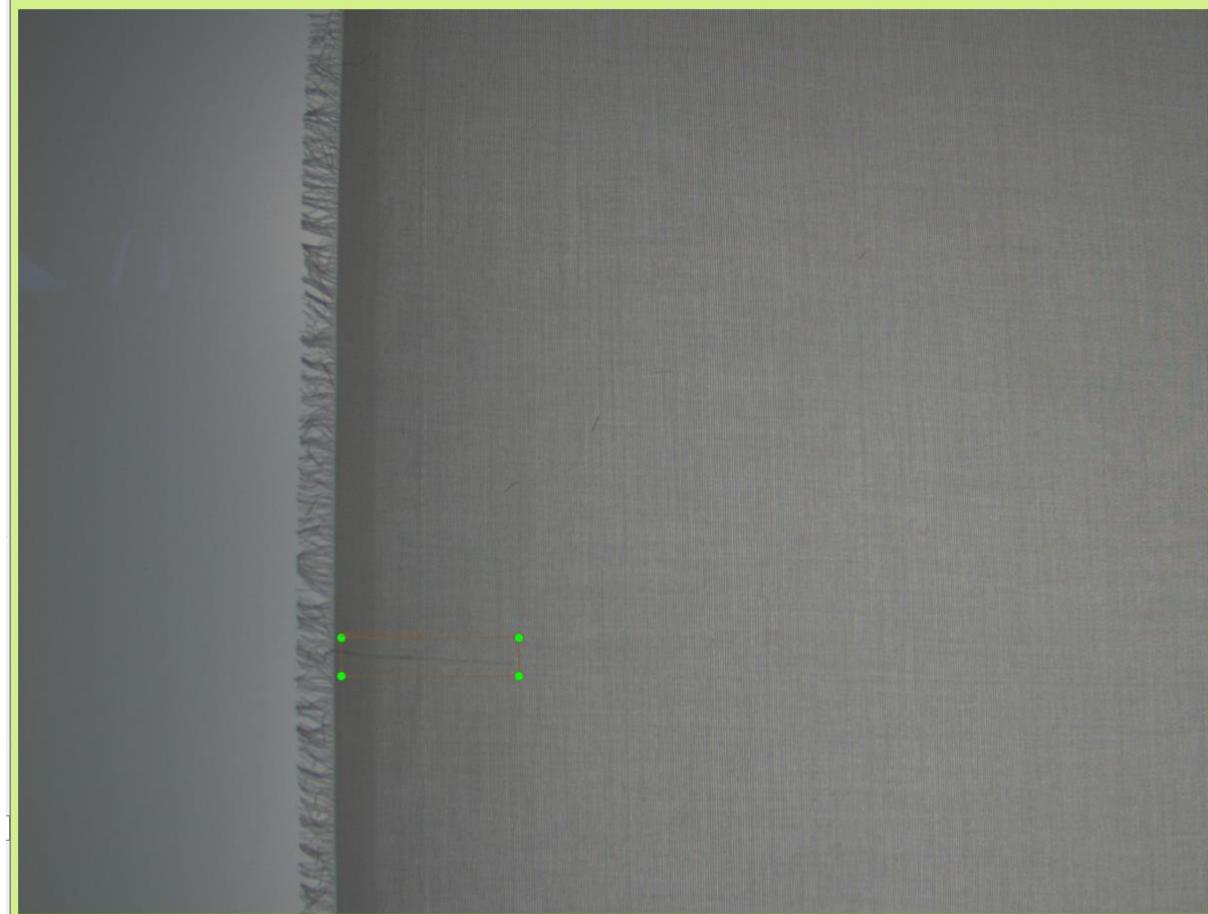
Asıl Veri



YOLOv4 Sonucu



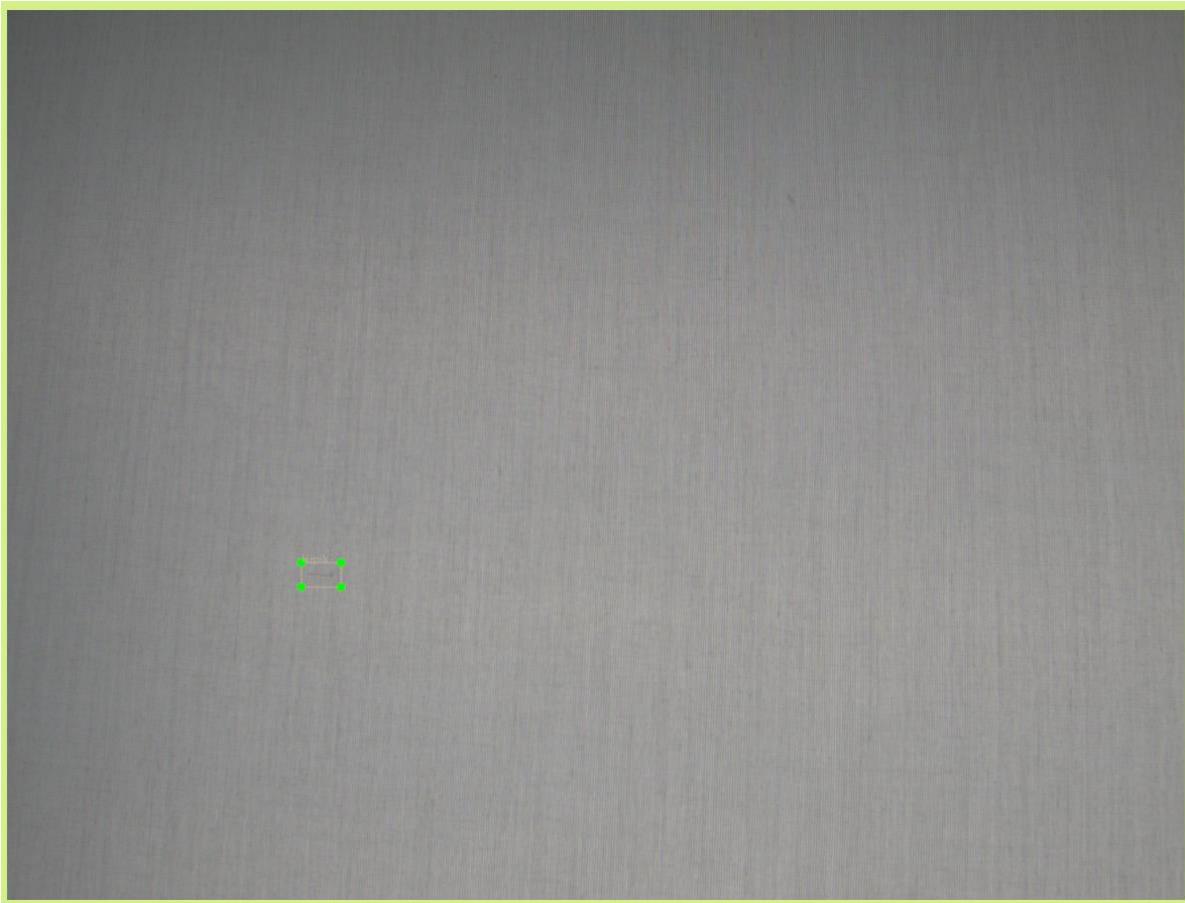
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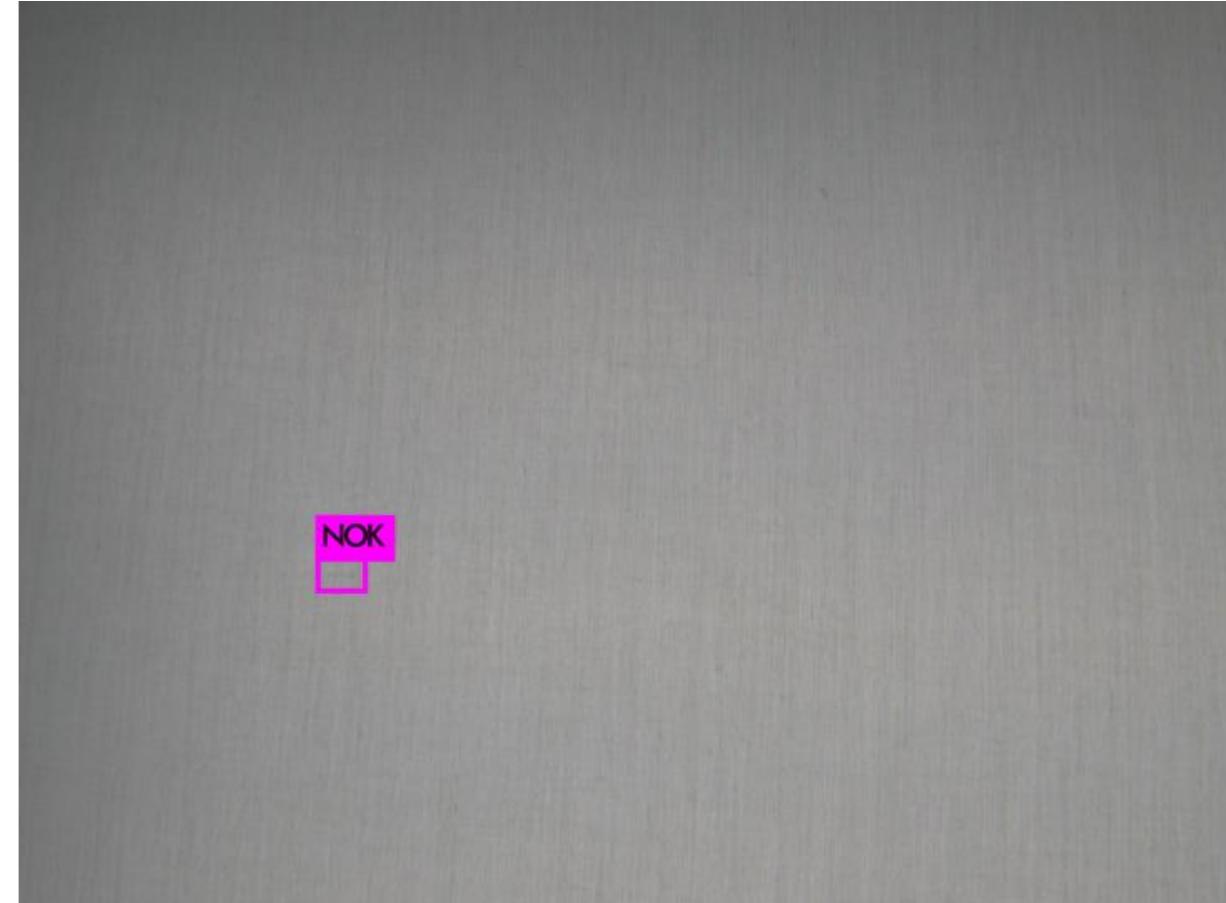
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## Asıl Veri



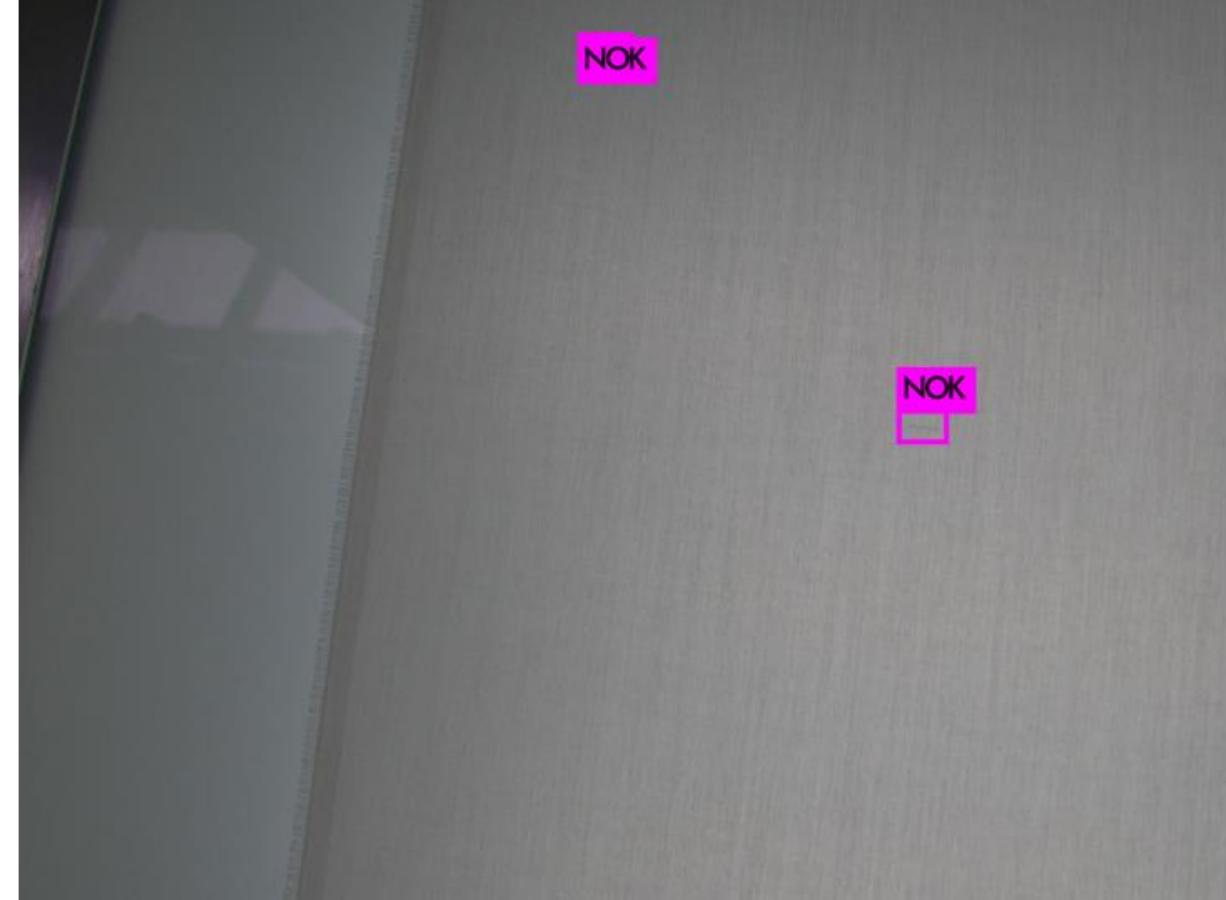
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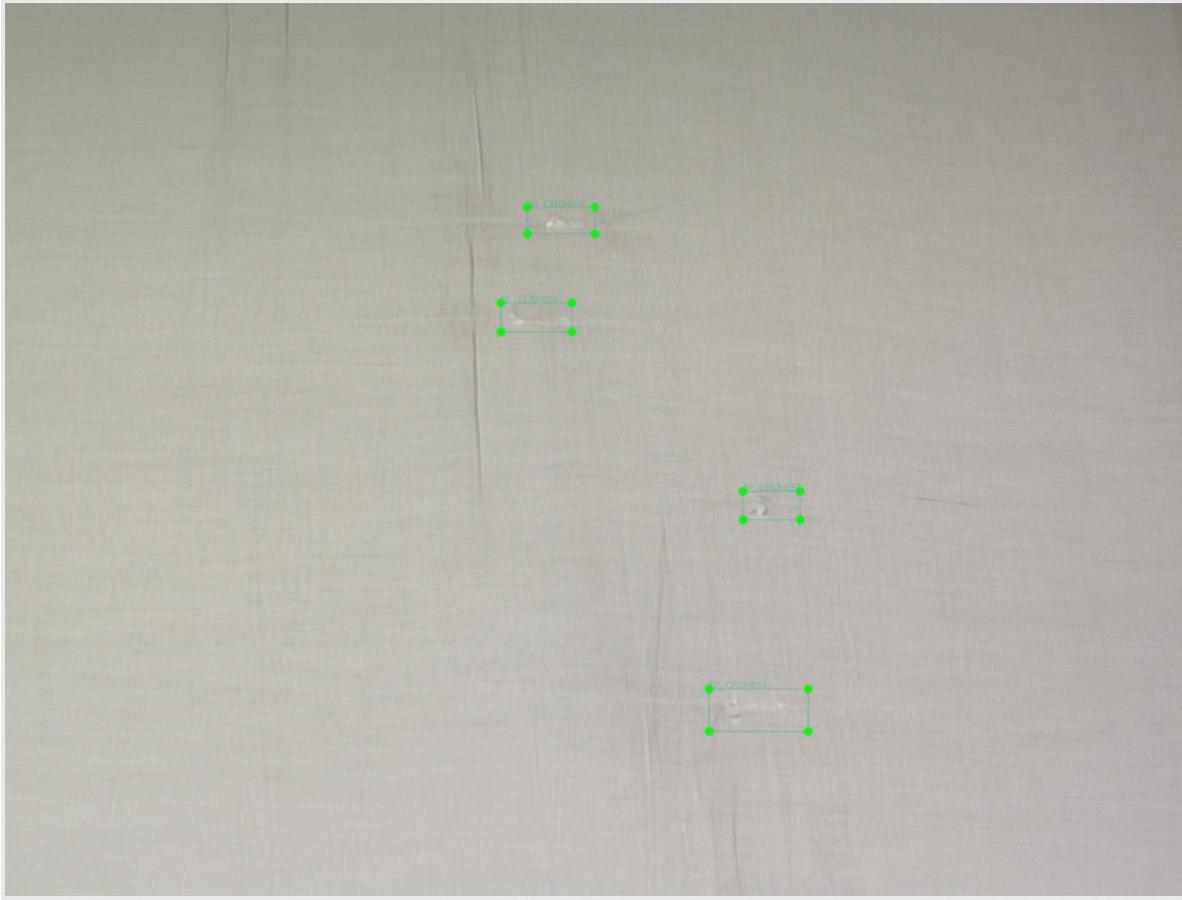
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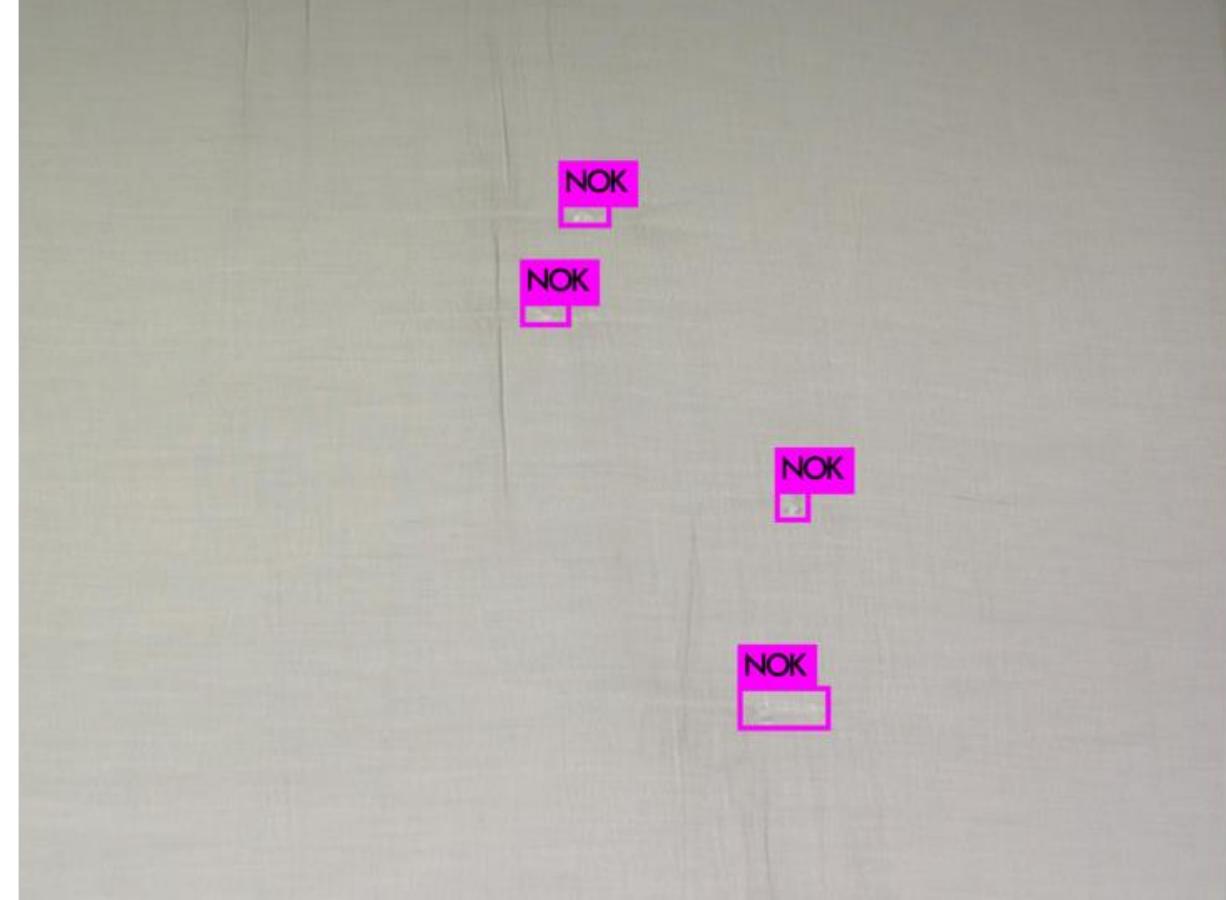
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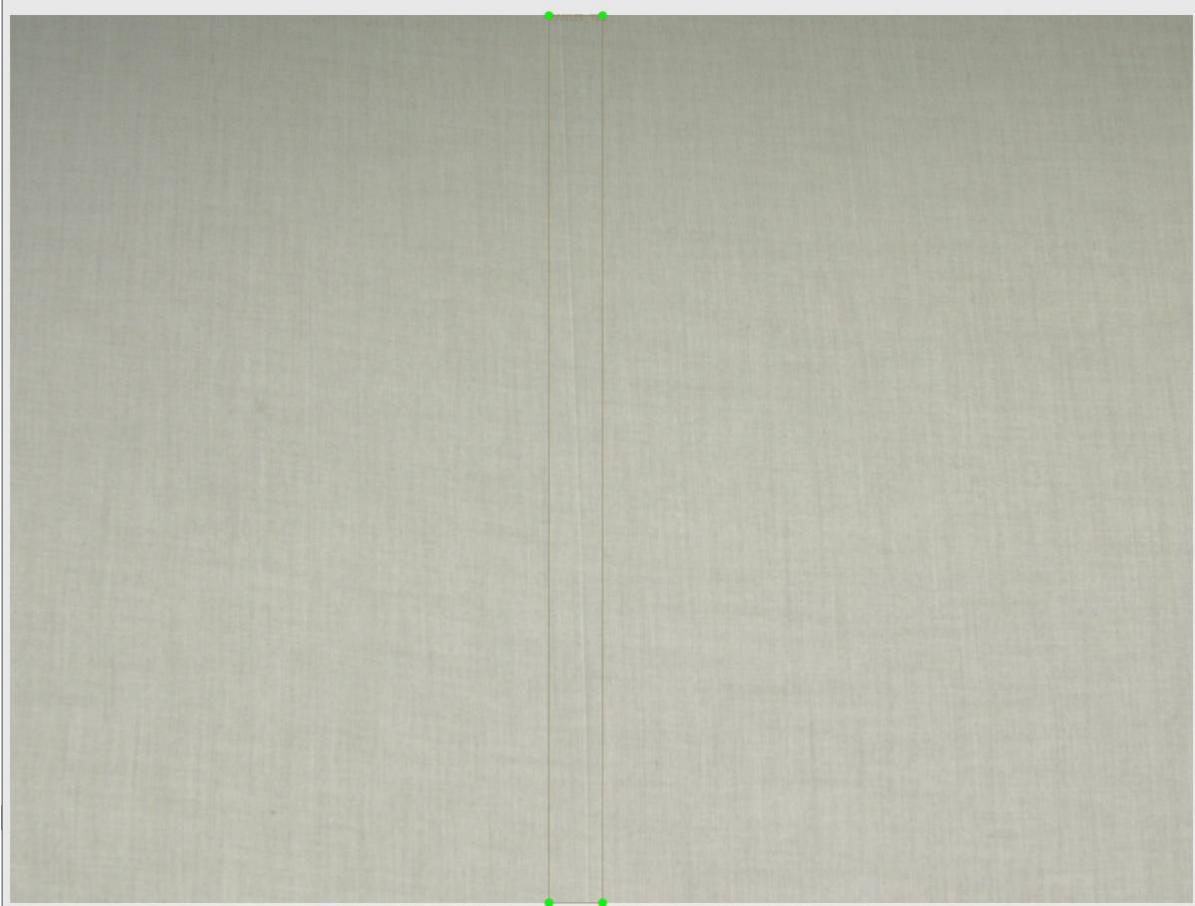
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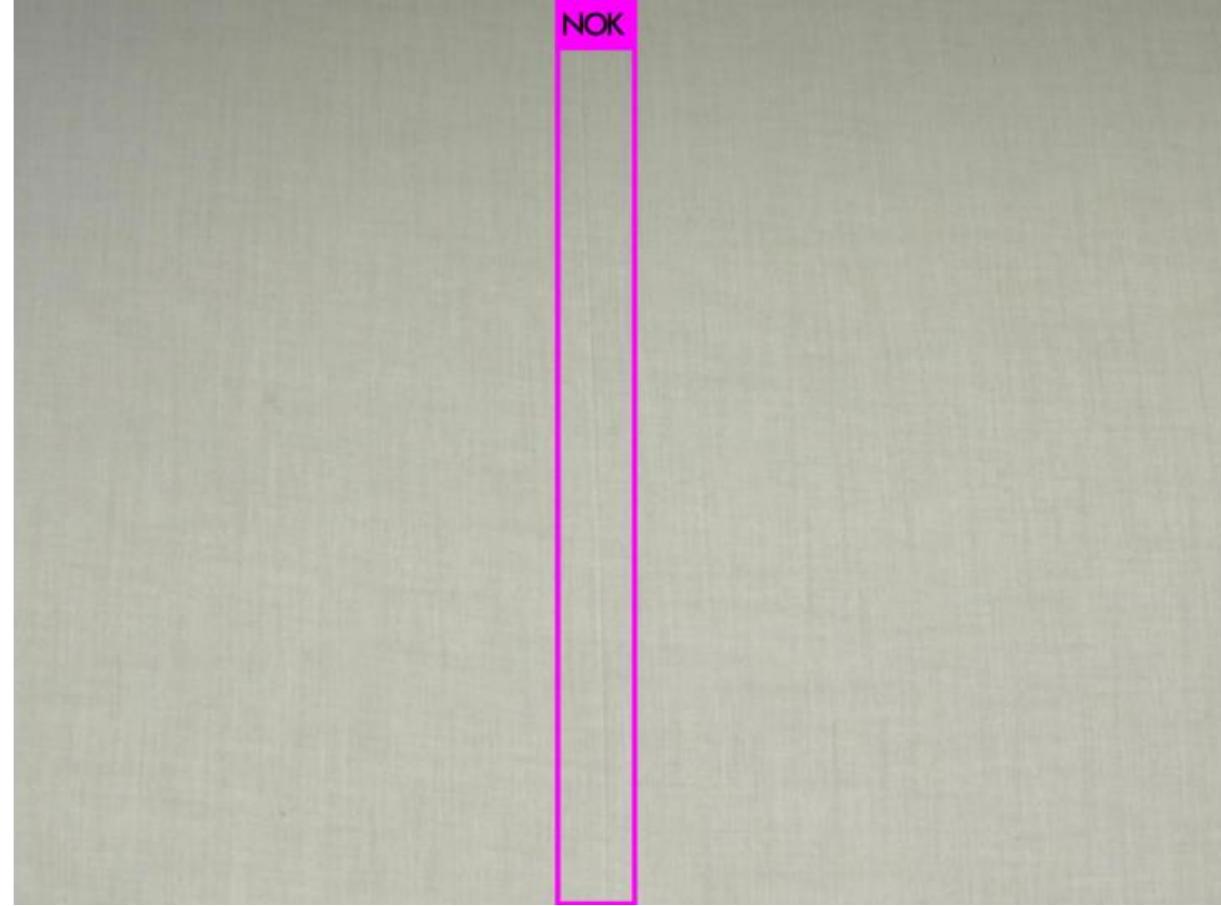
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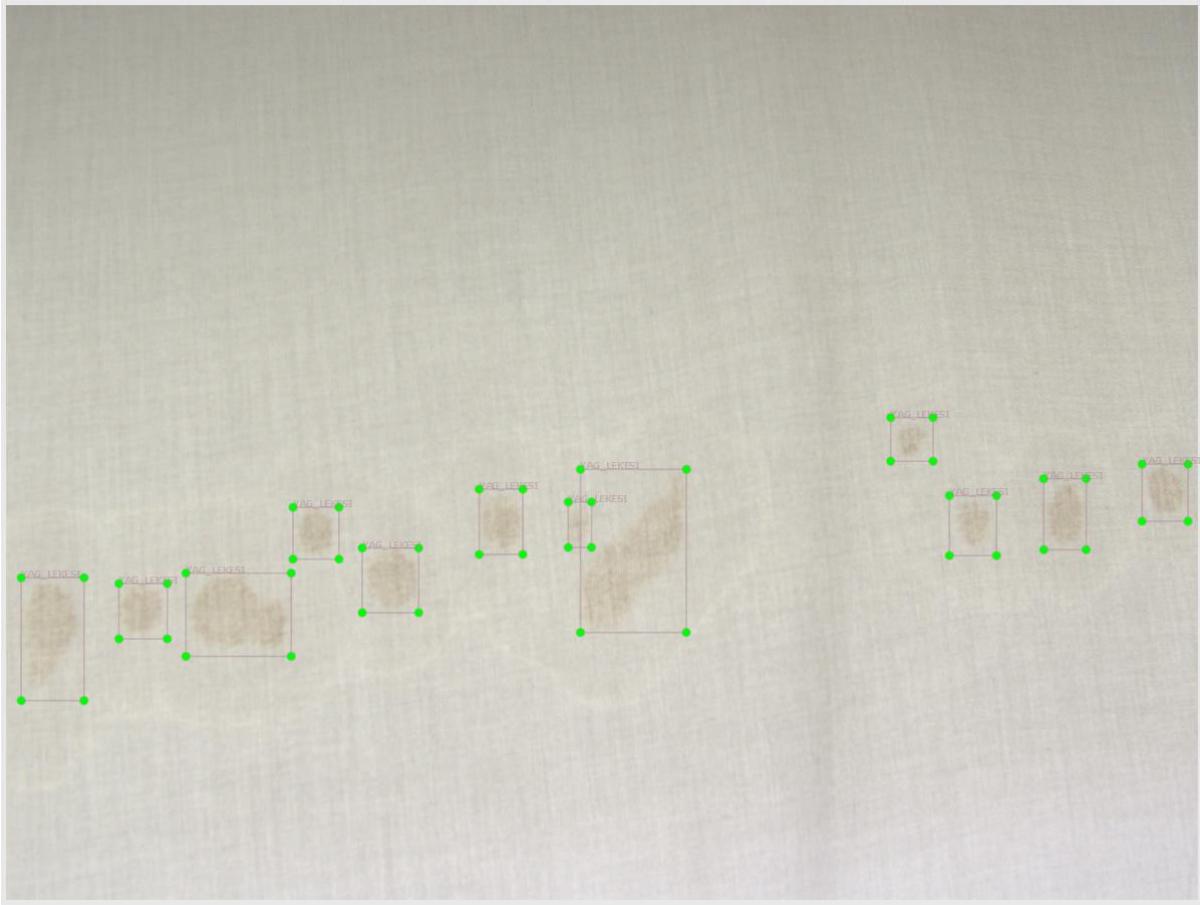
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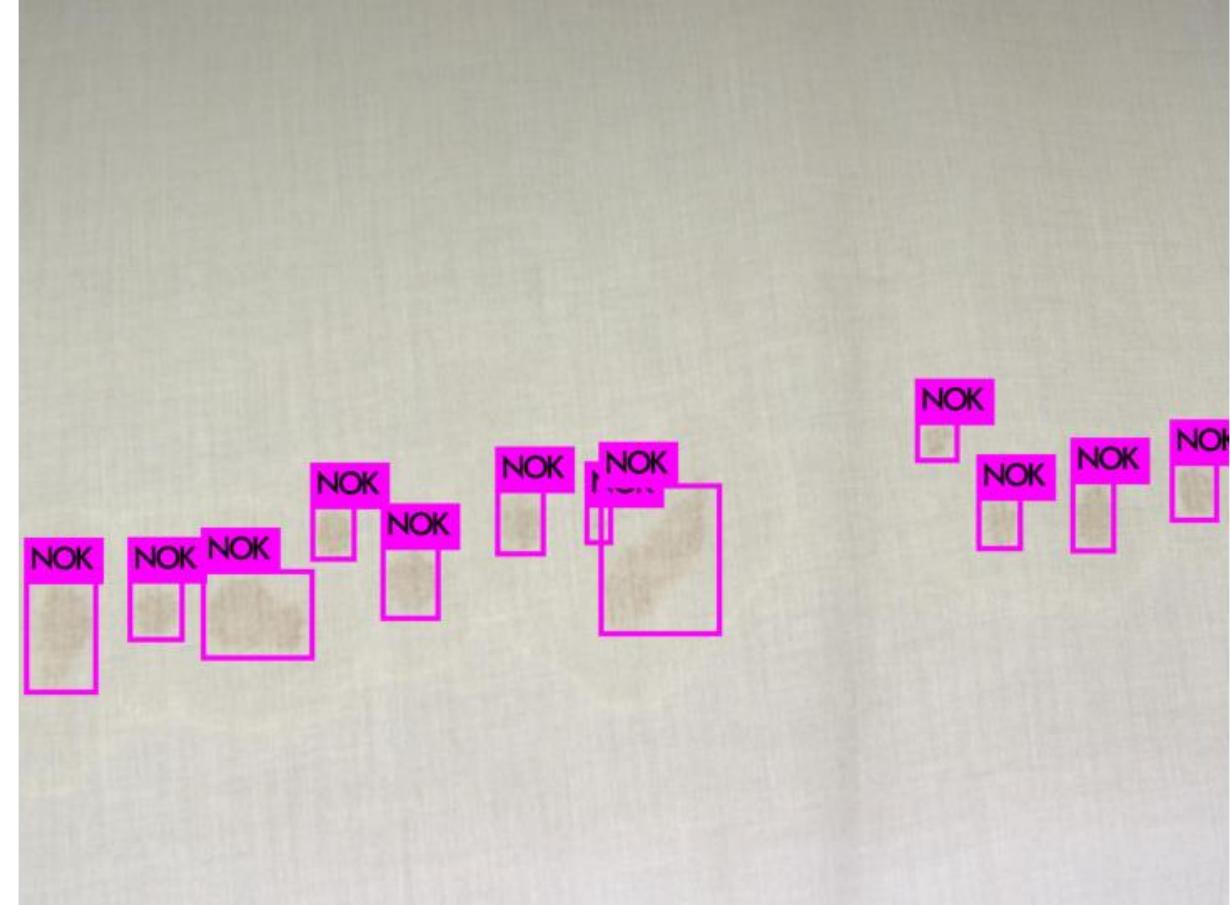
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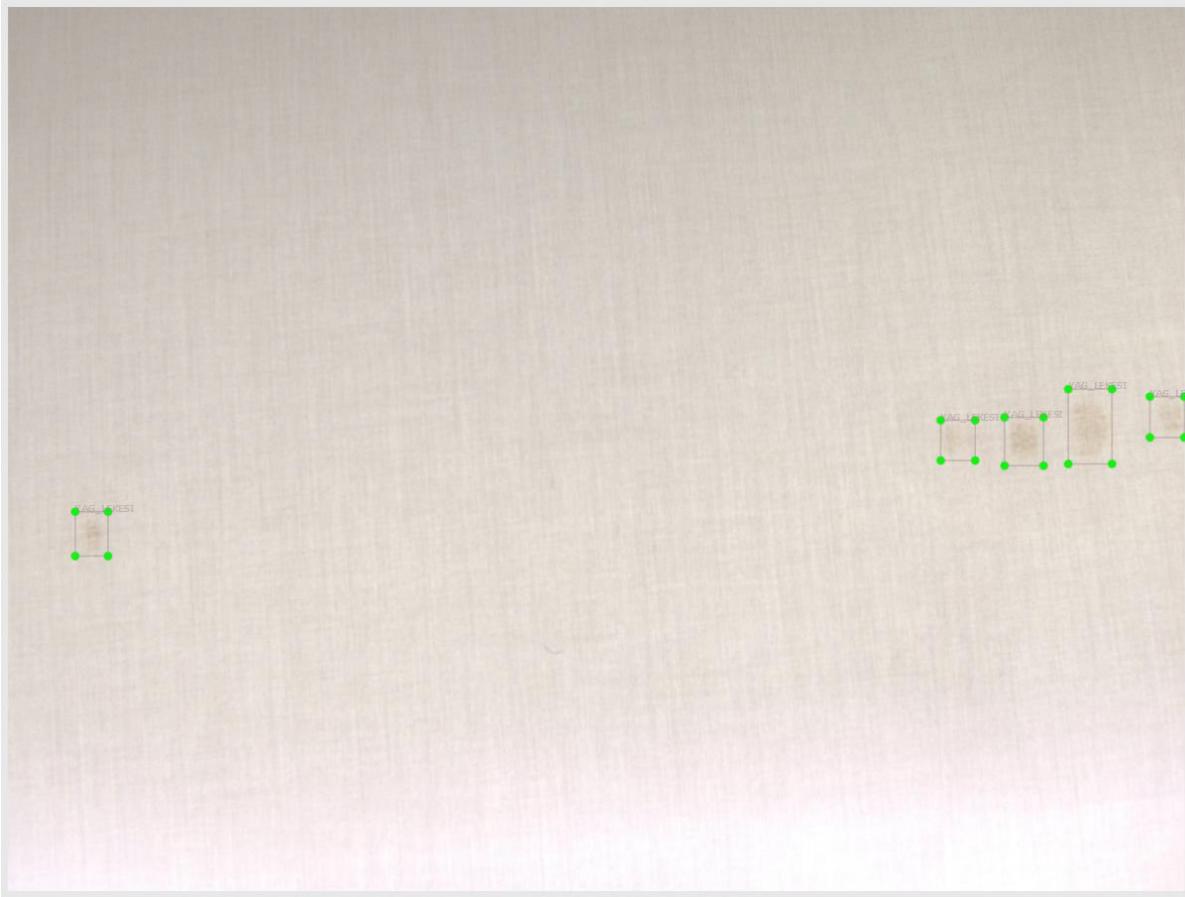
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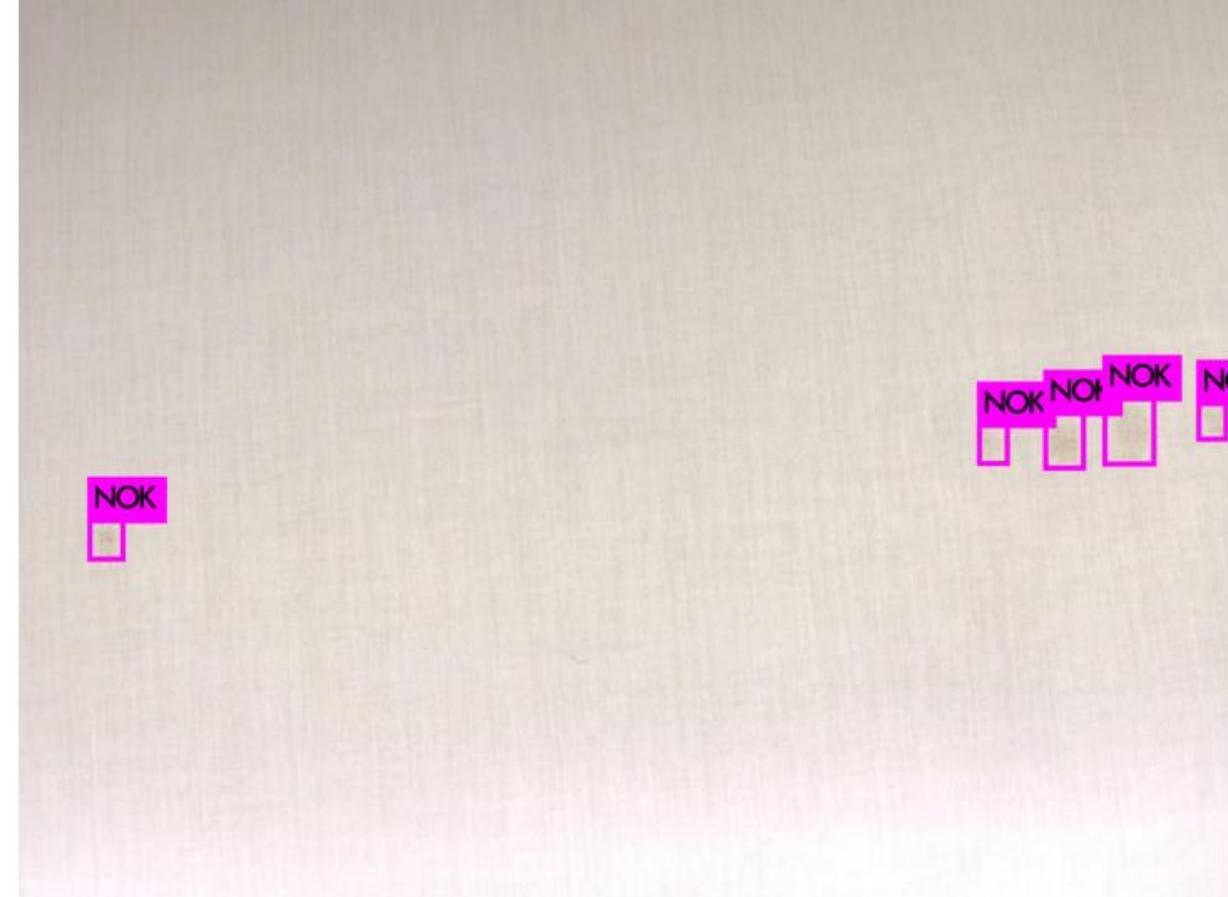
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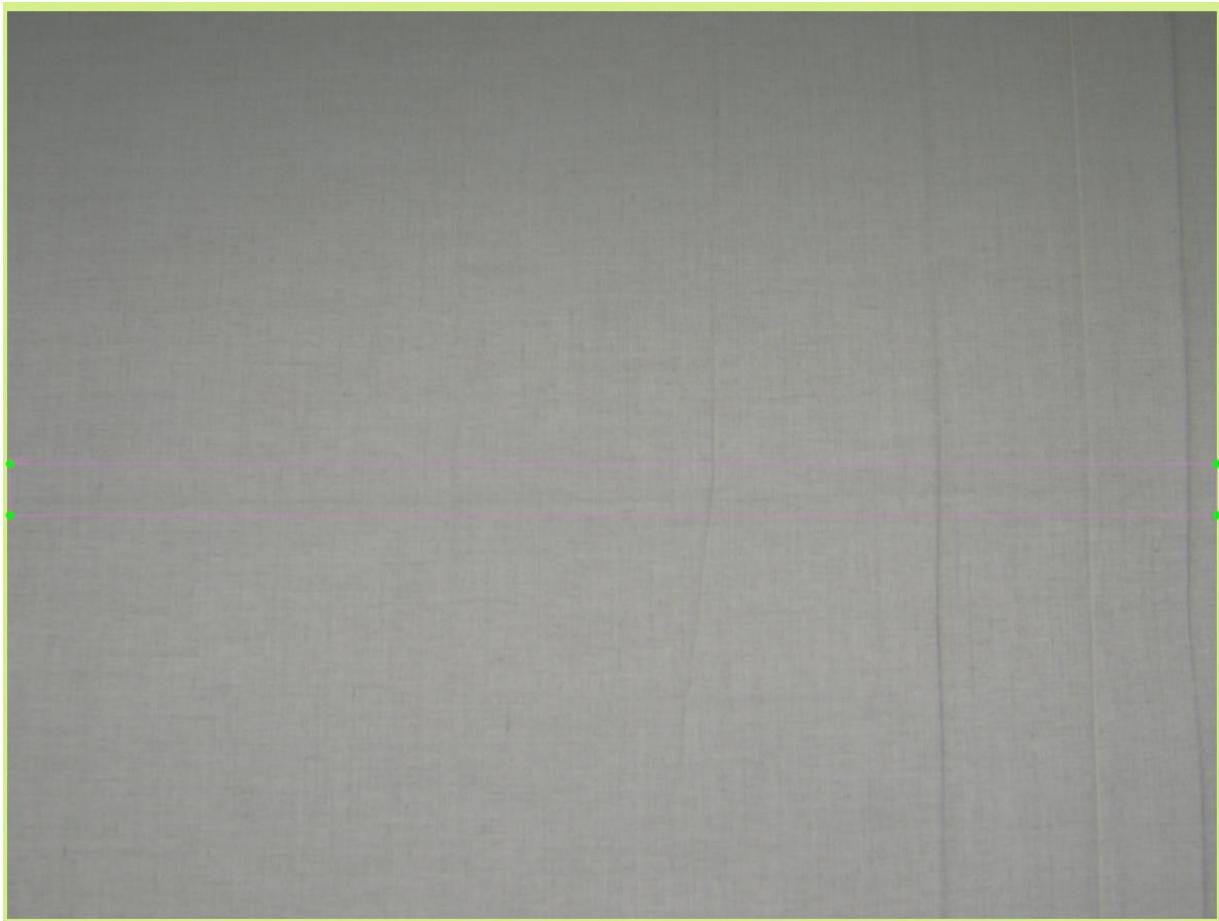
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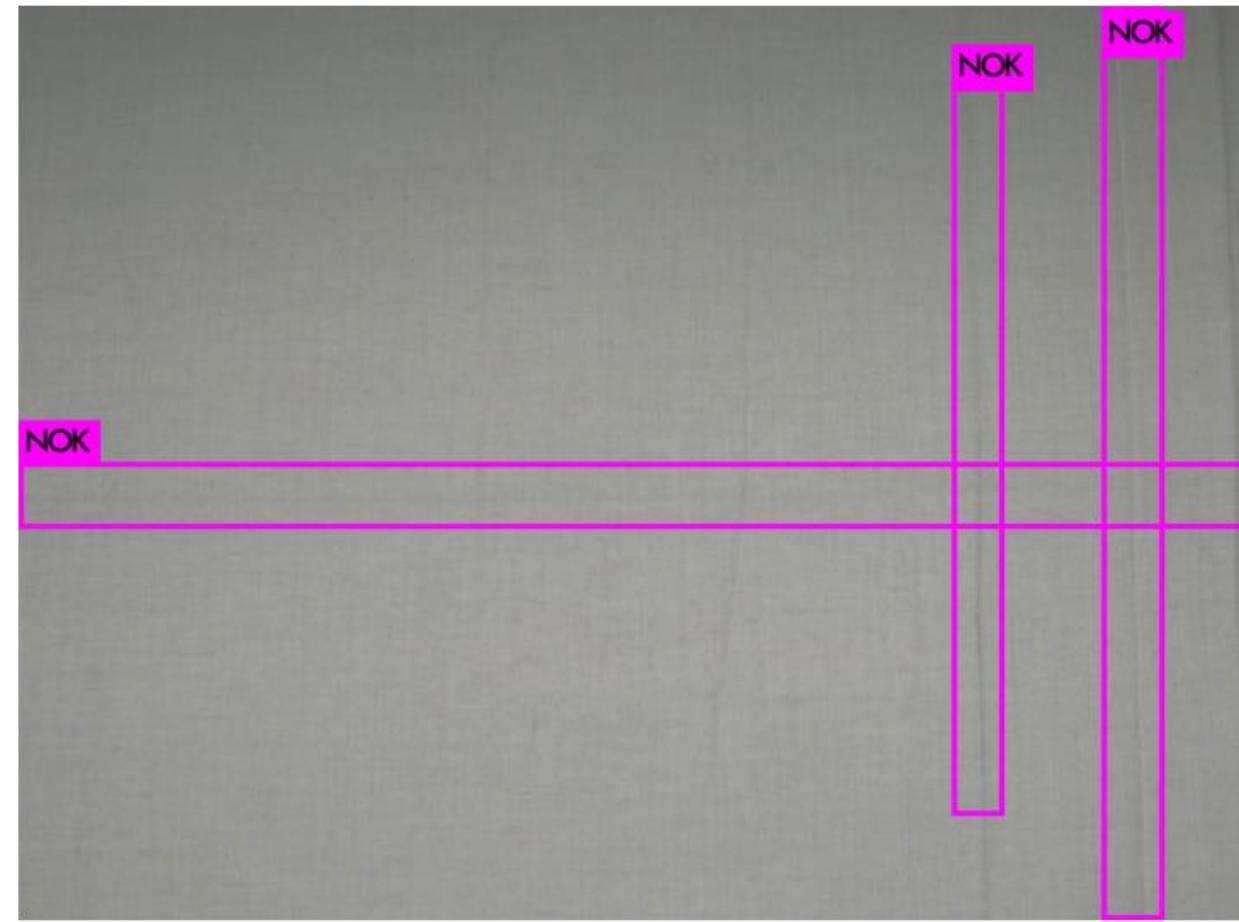
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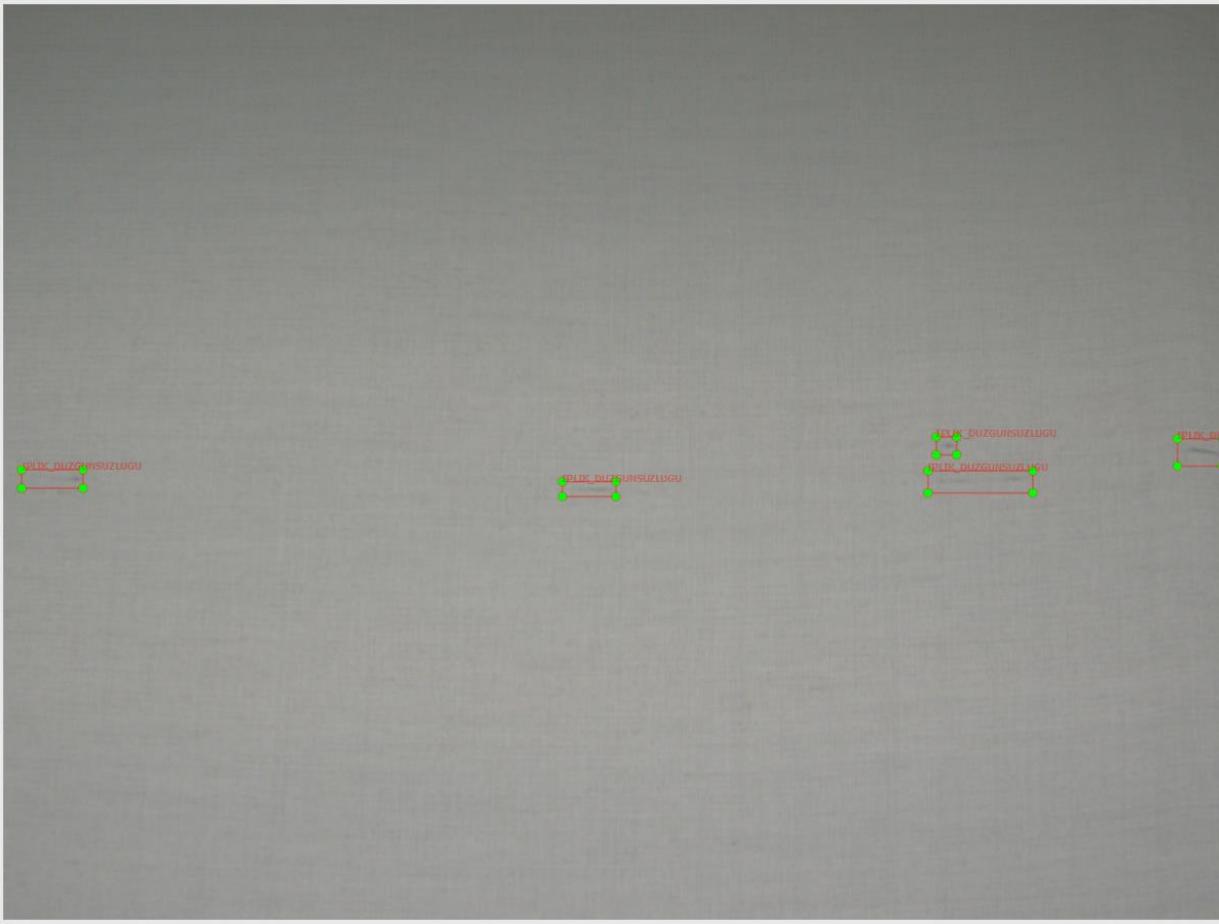
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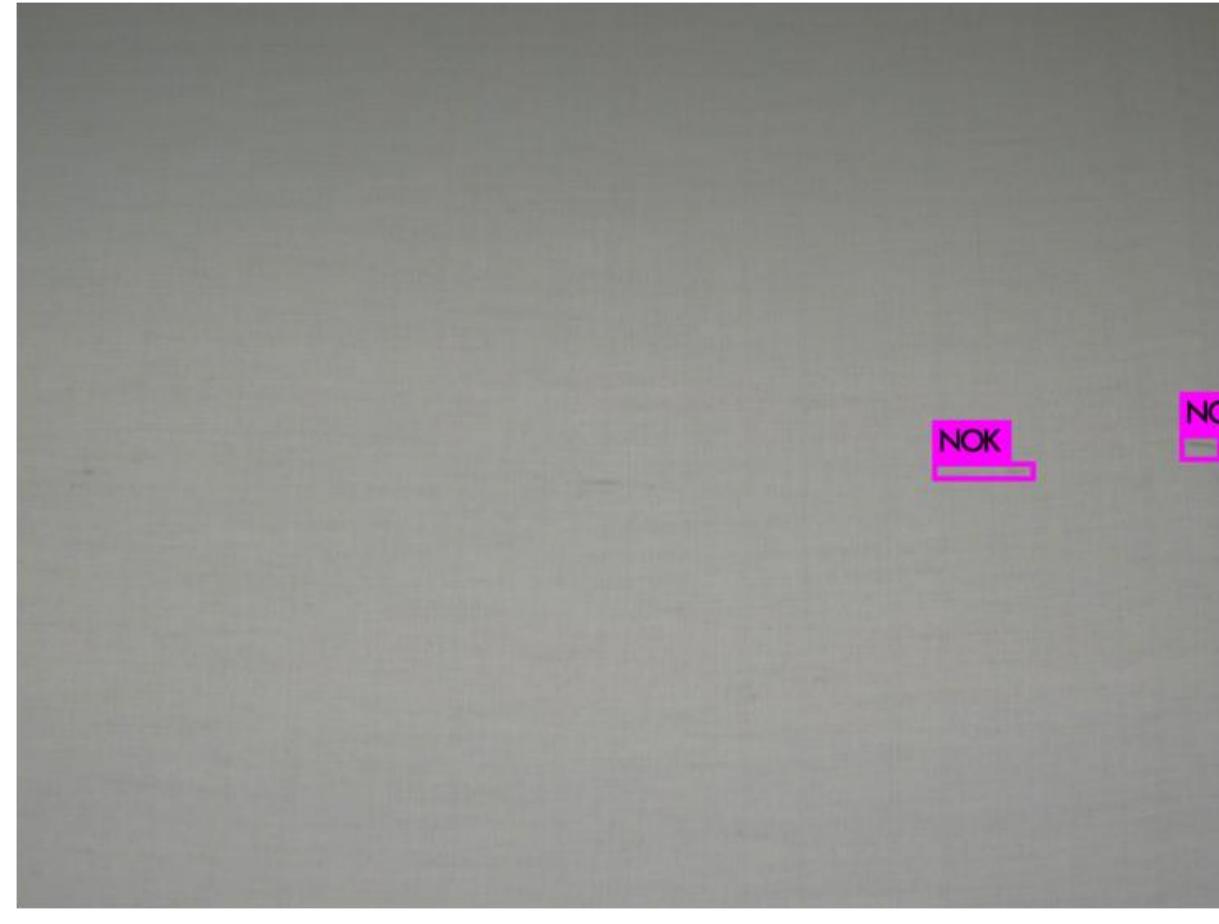
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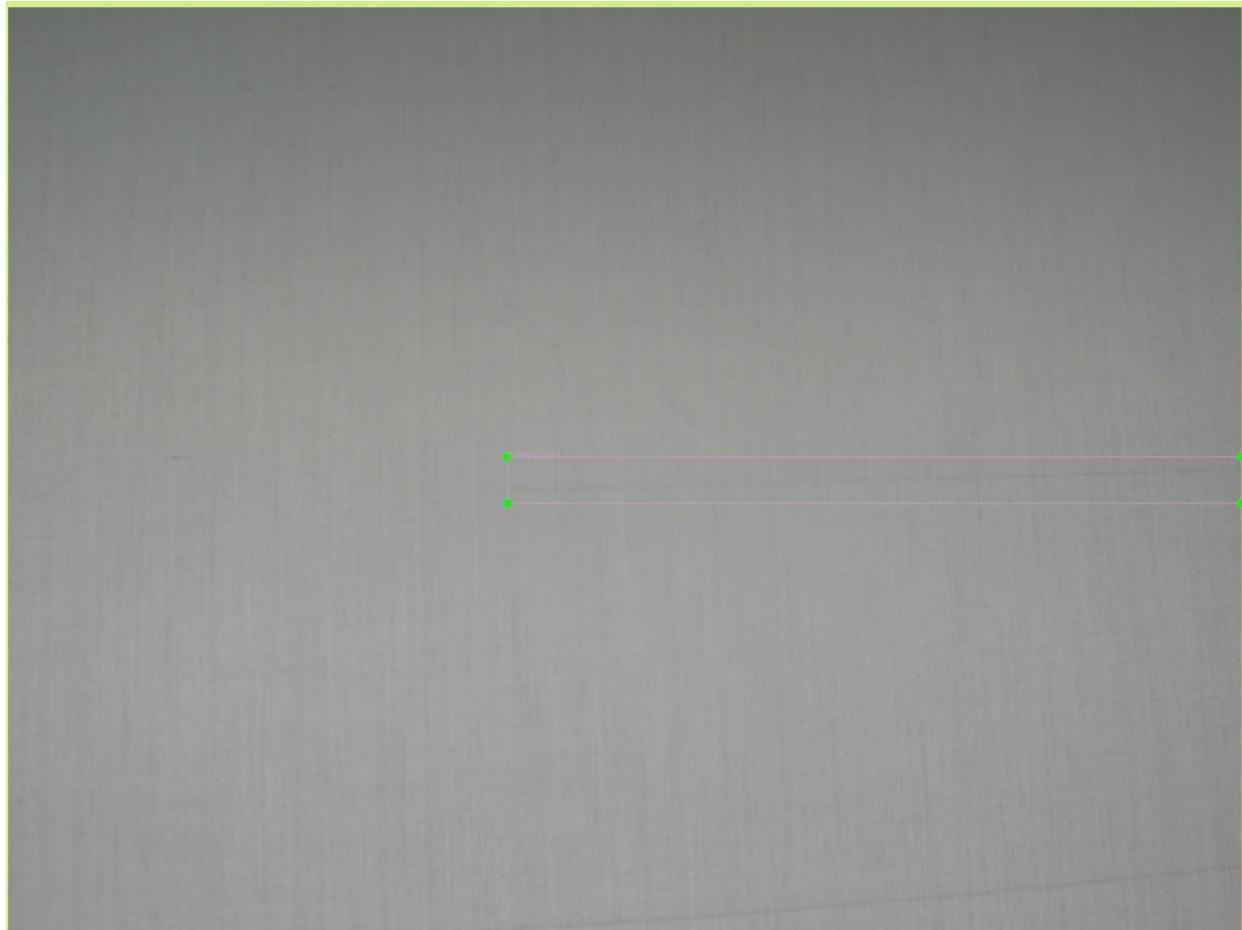
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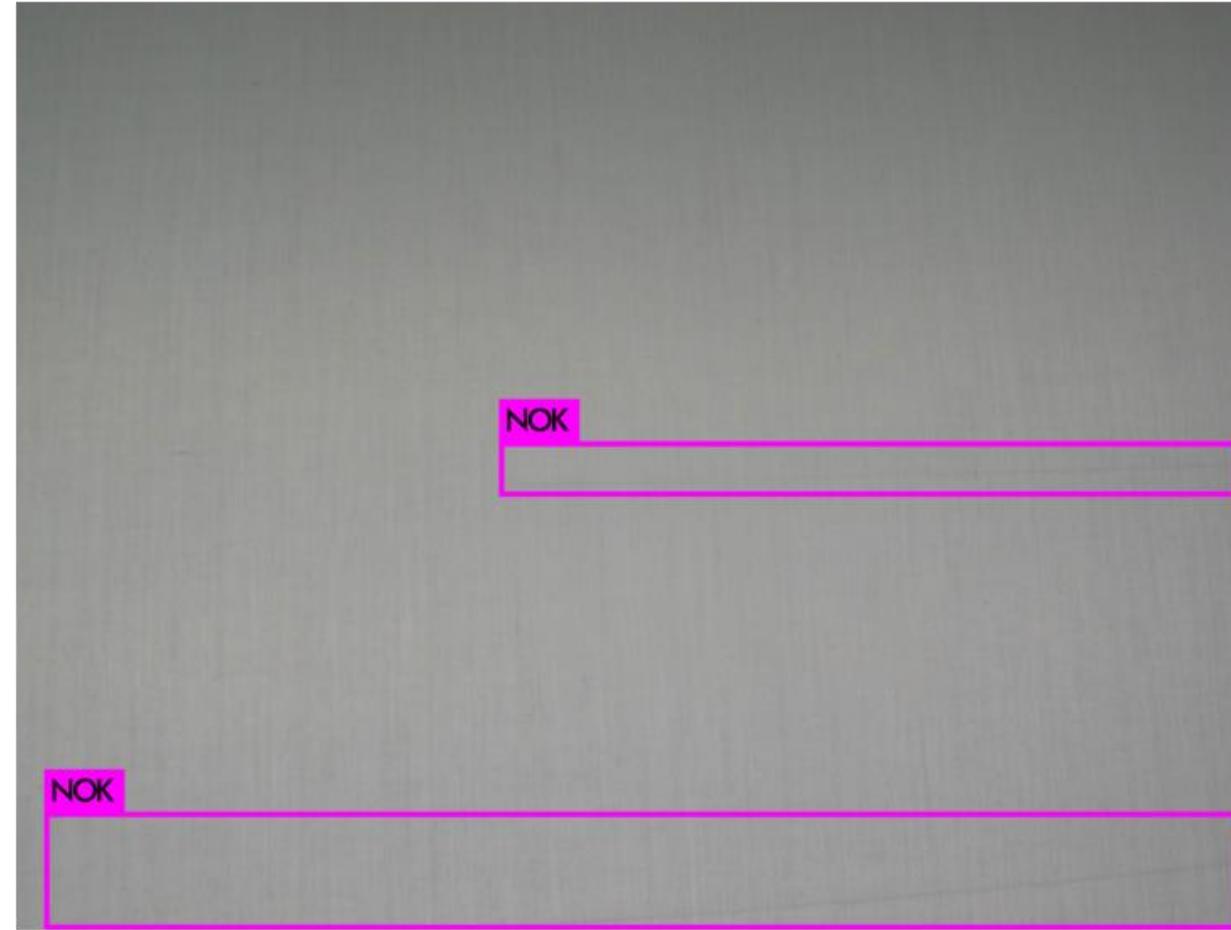
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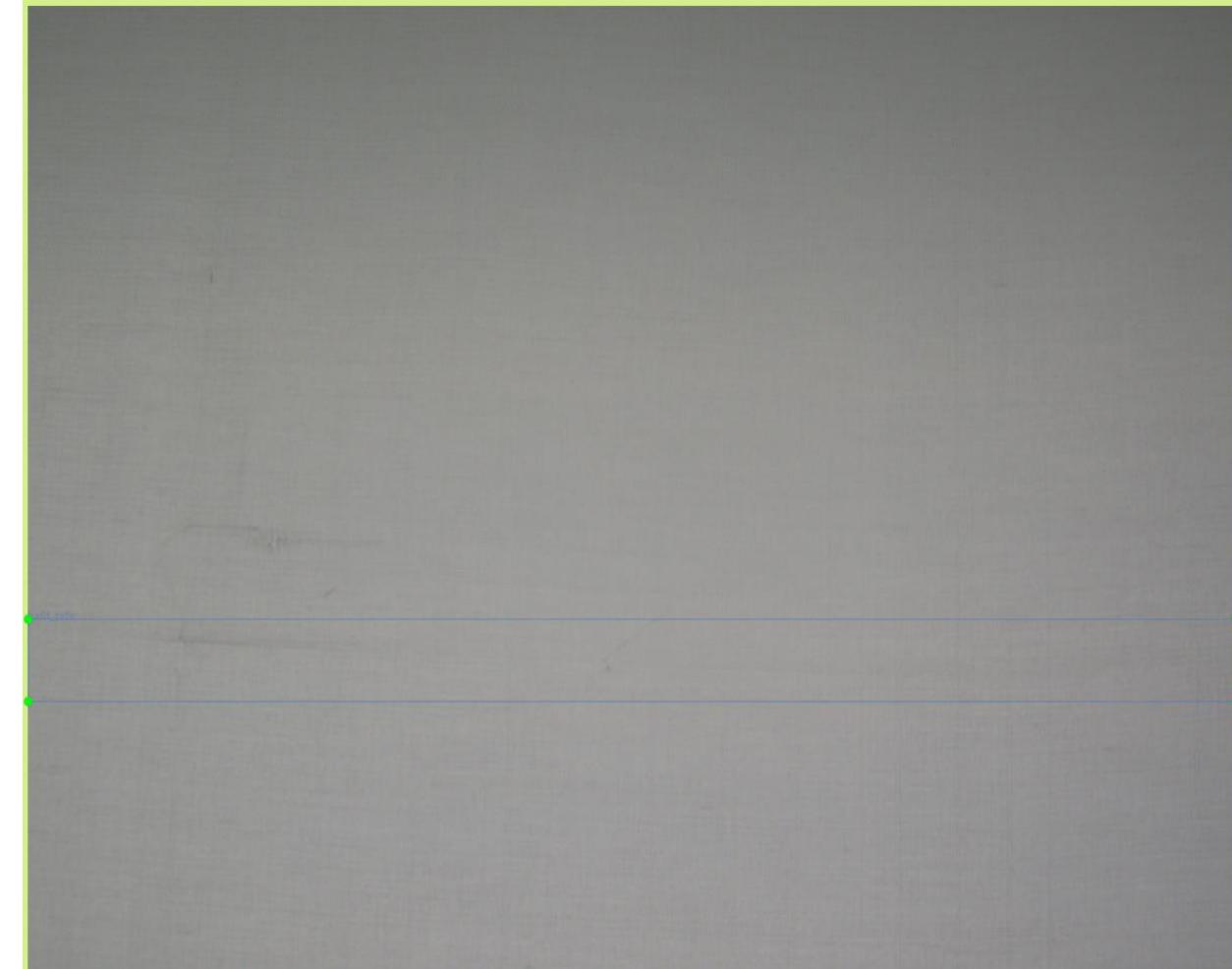
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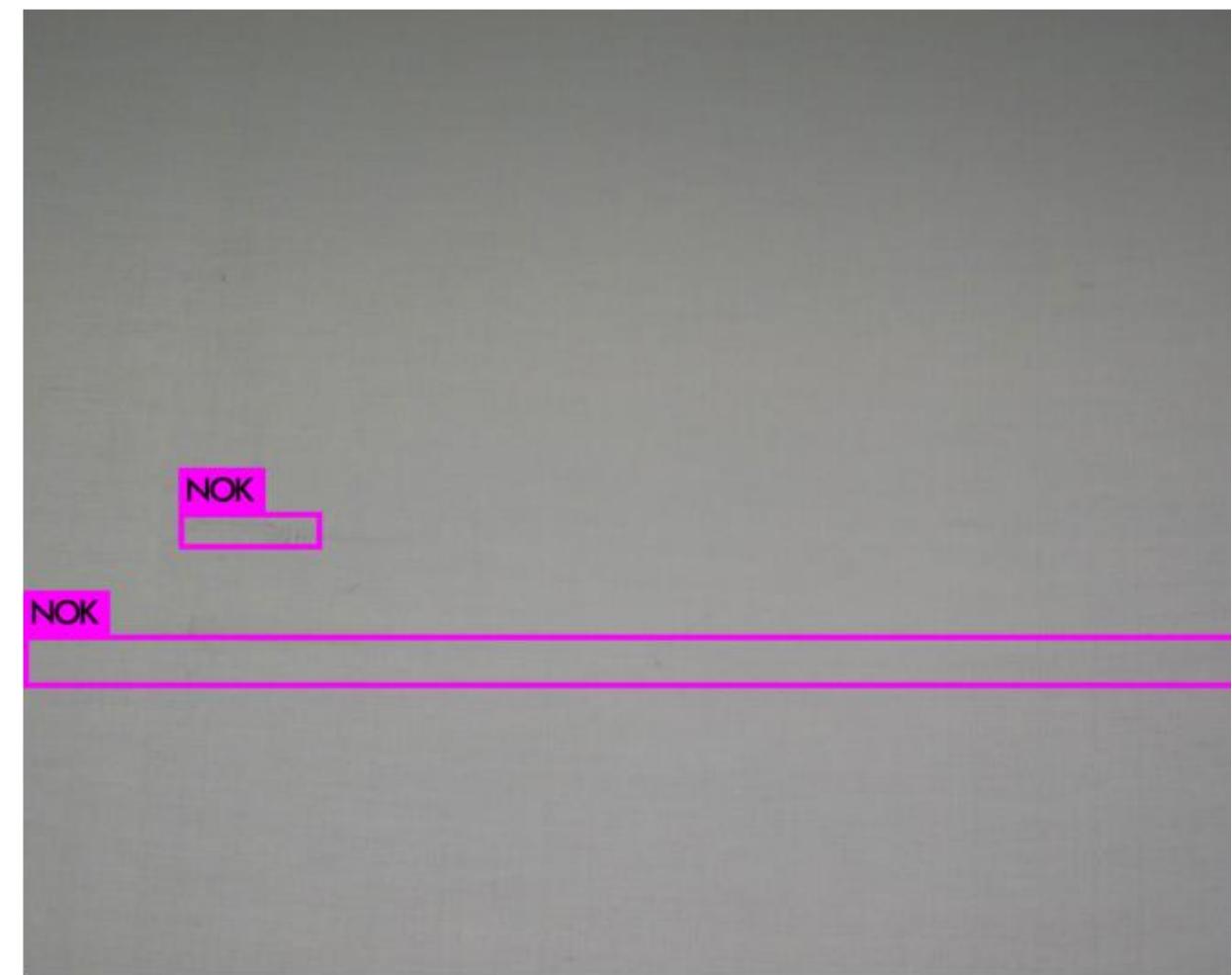
## YOLOv4 Sonucu



## Asıl Veri



## YOLOv4 Sonucu



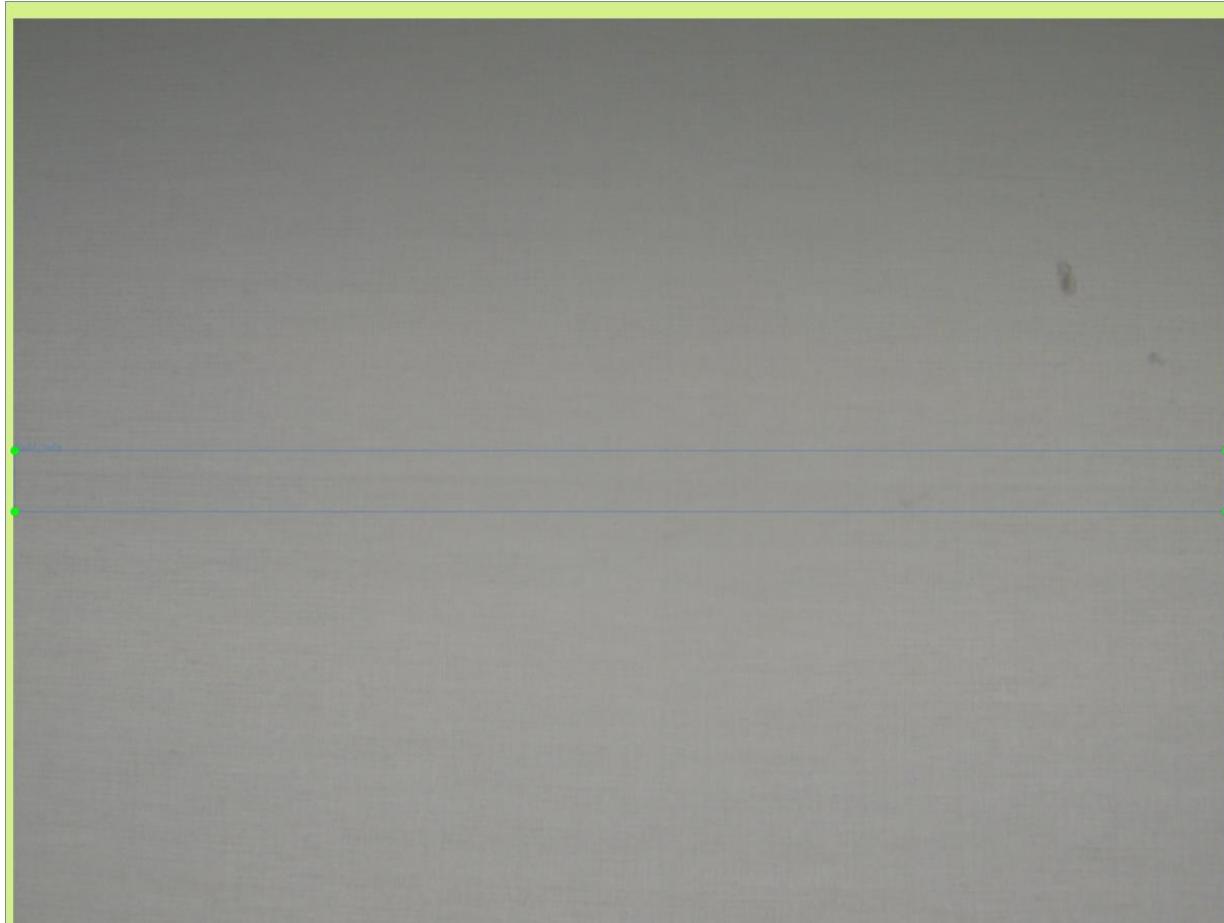
## Asıl Veri



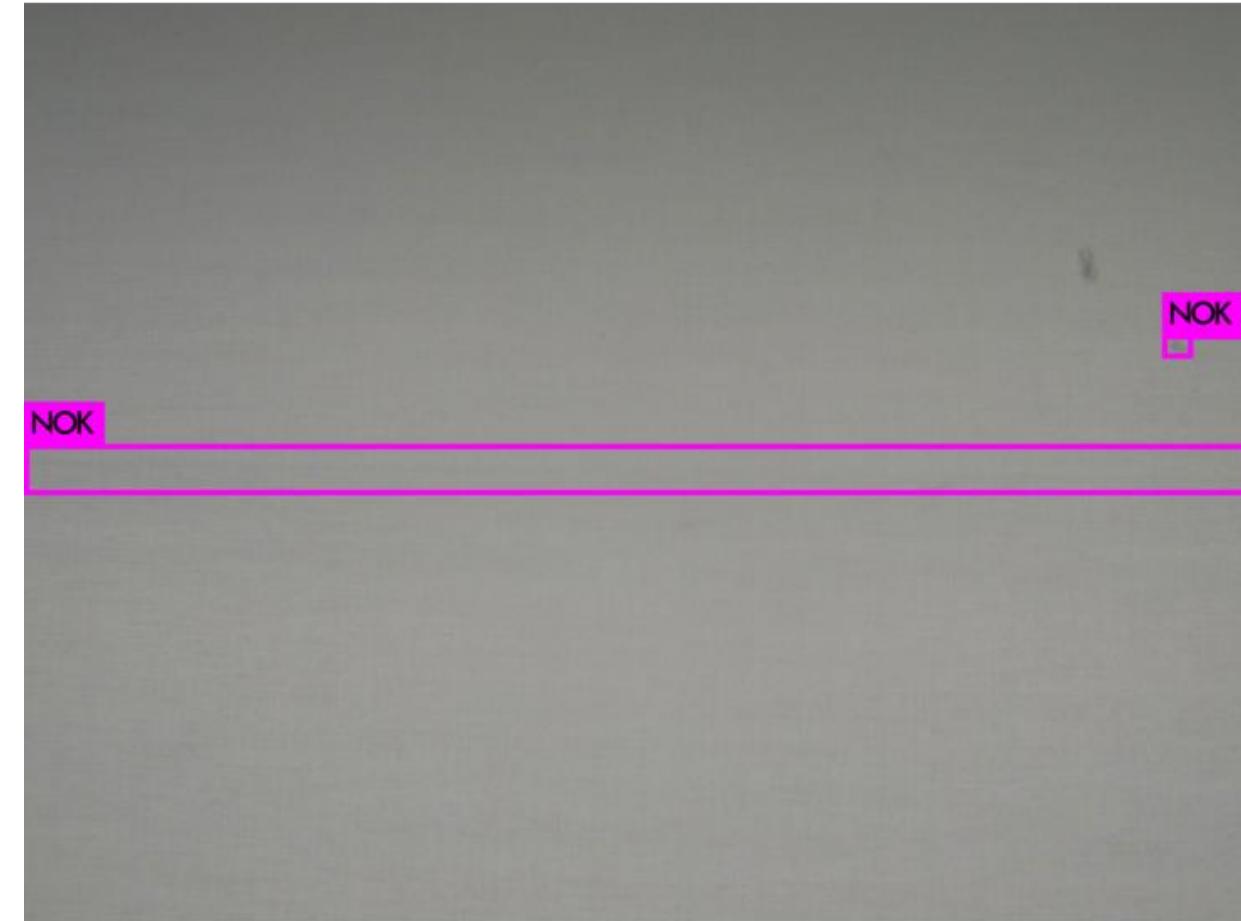
## YOLOv4 Sonucu

NOK

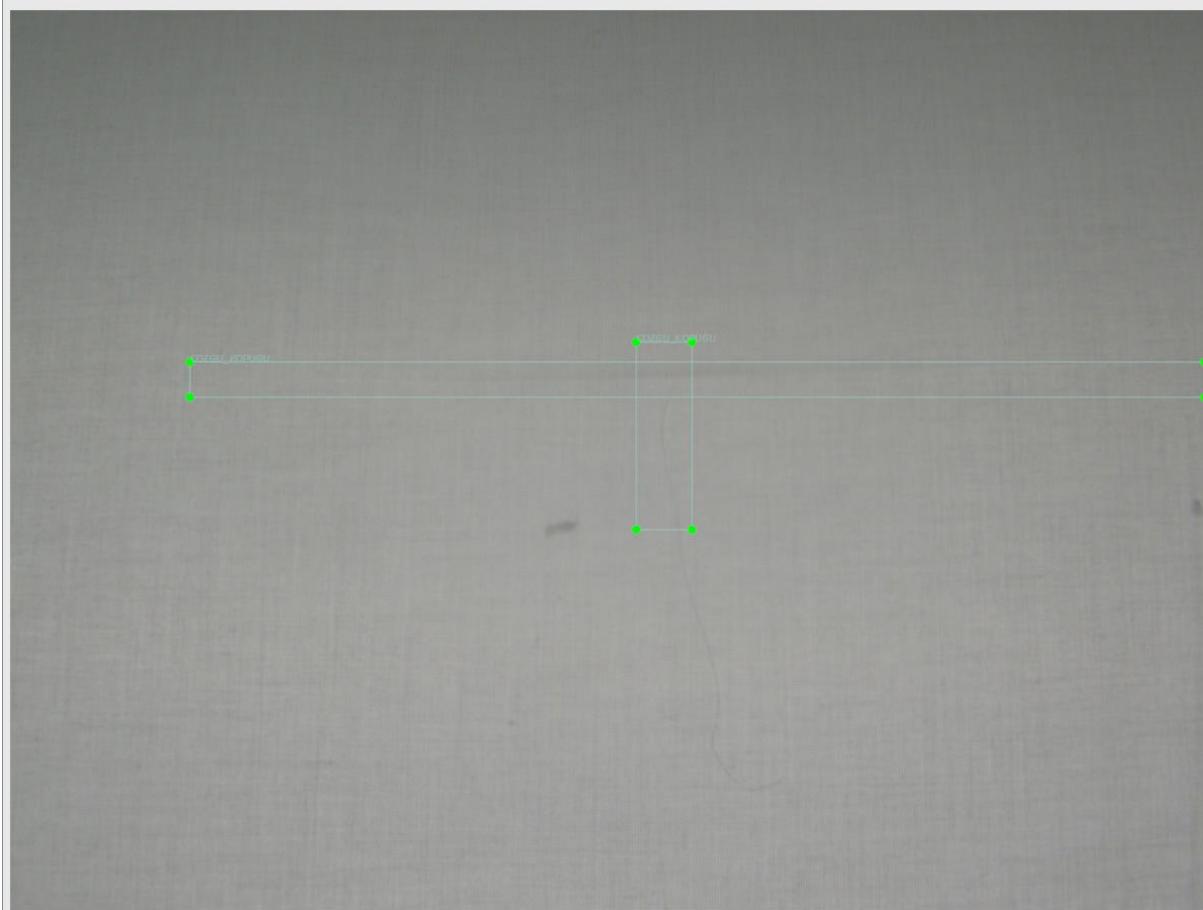
## Asıl Veri



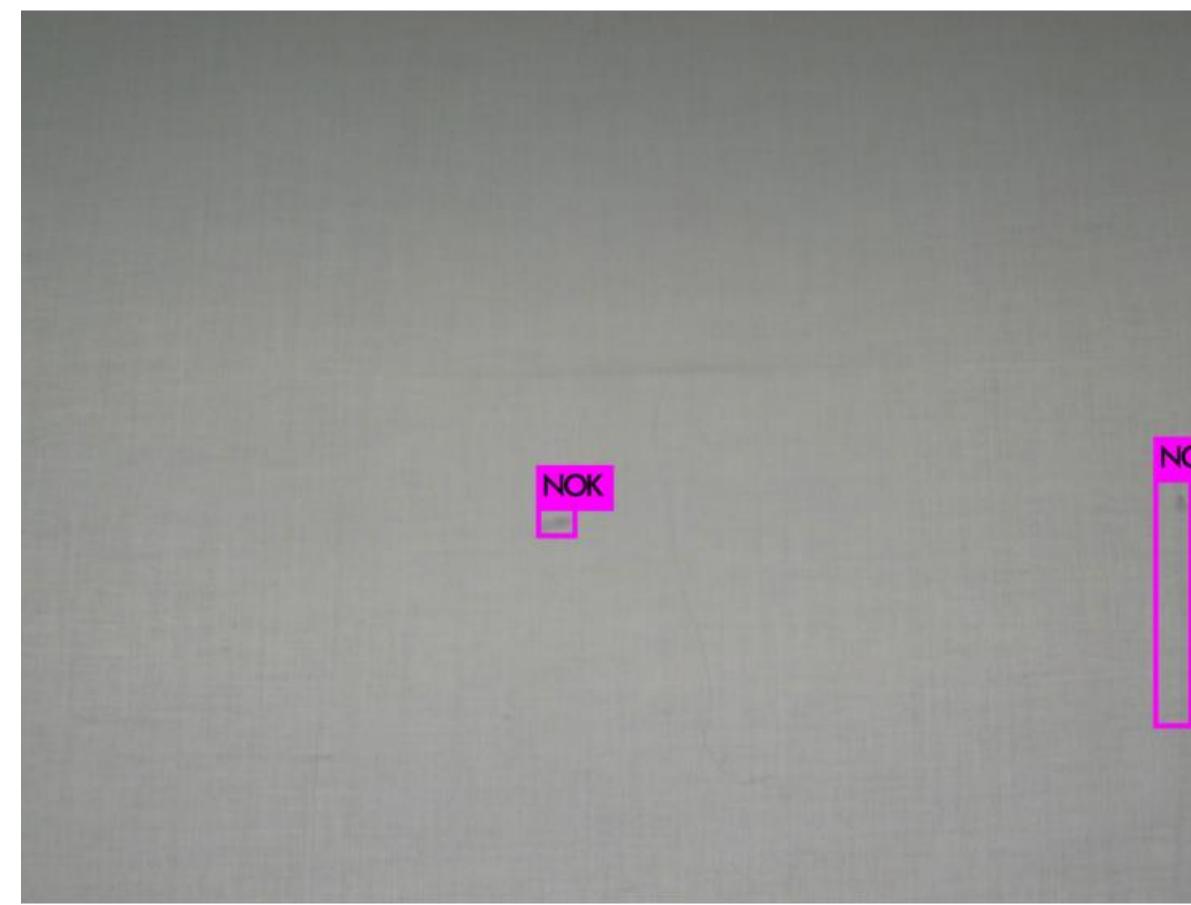
## YOLOv4 Sonucu



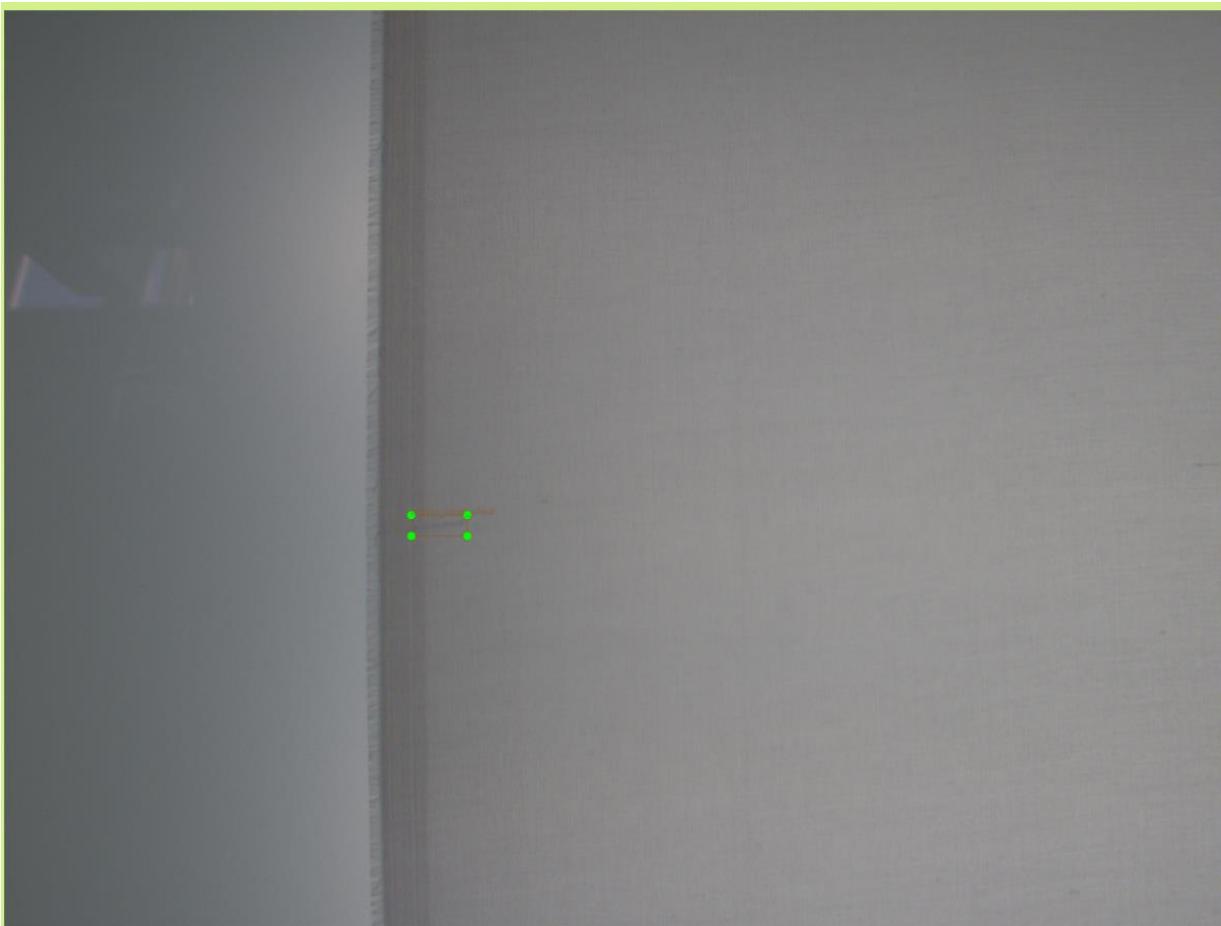
## Asıl Veri



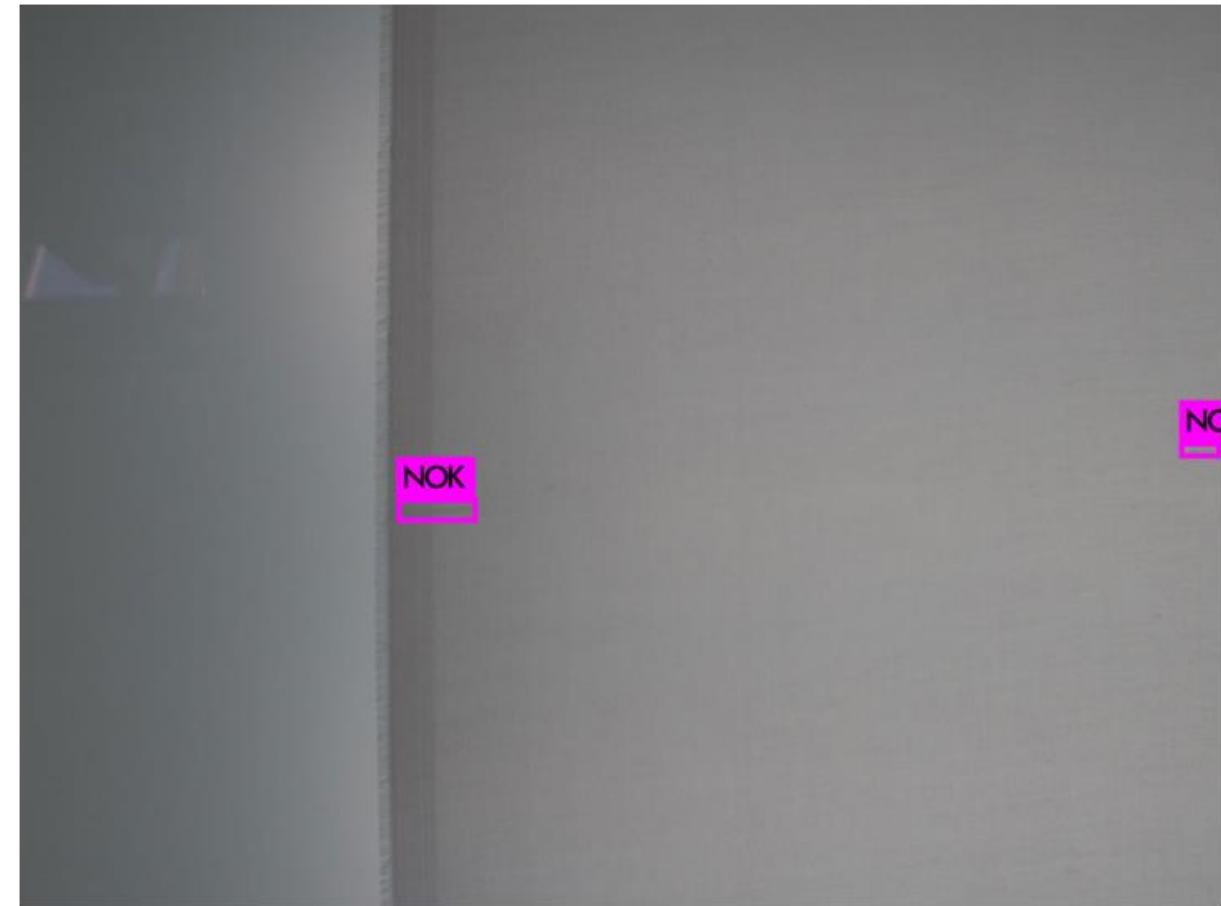
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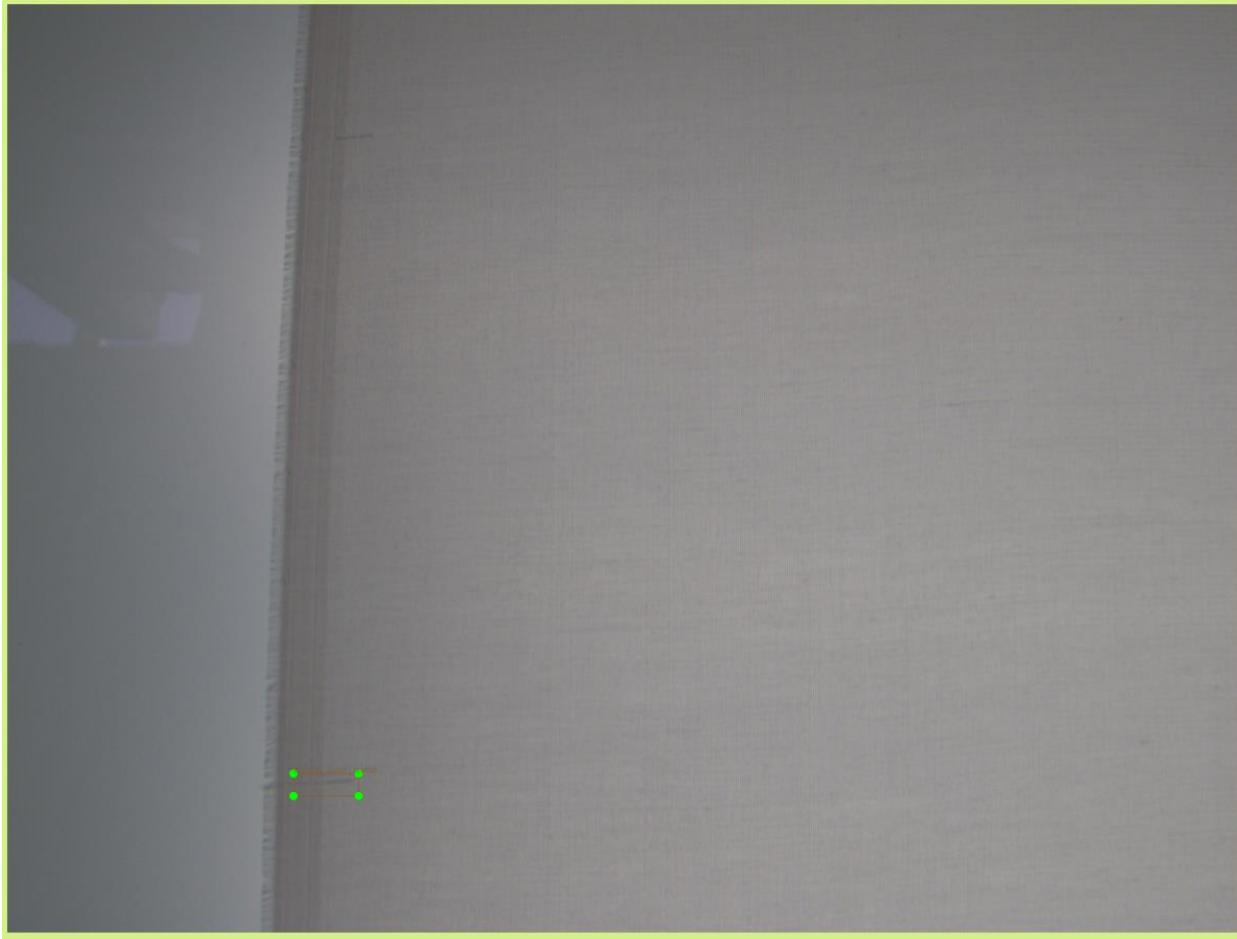
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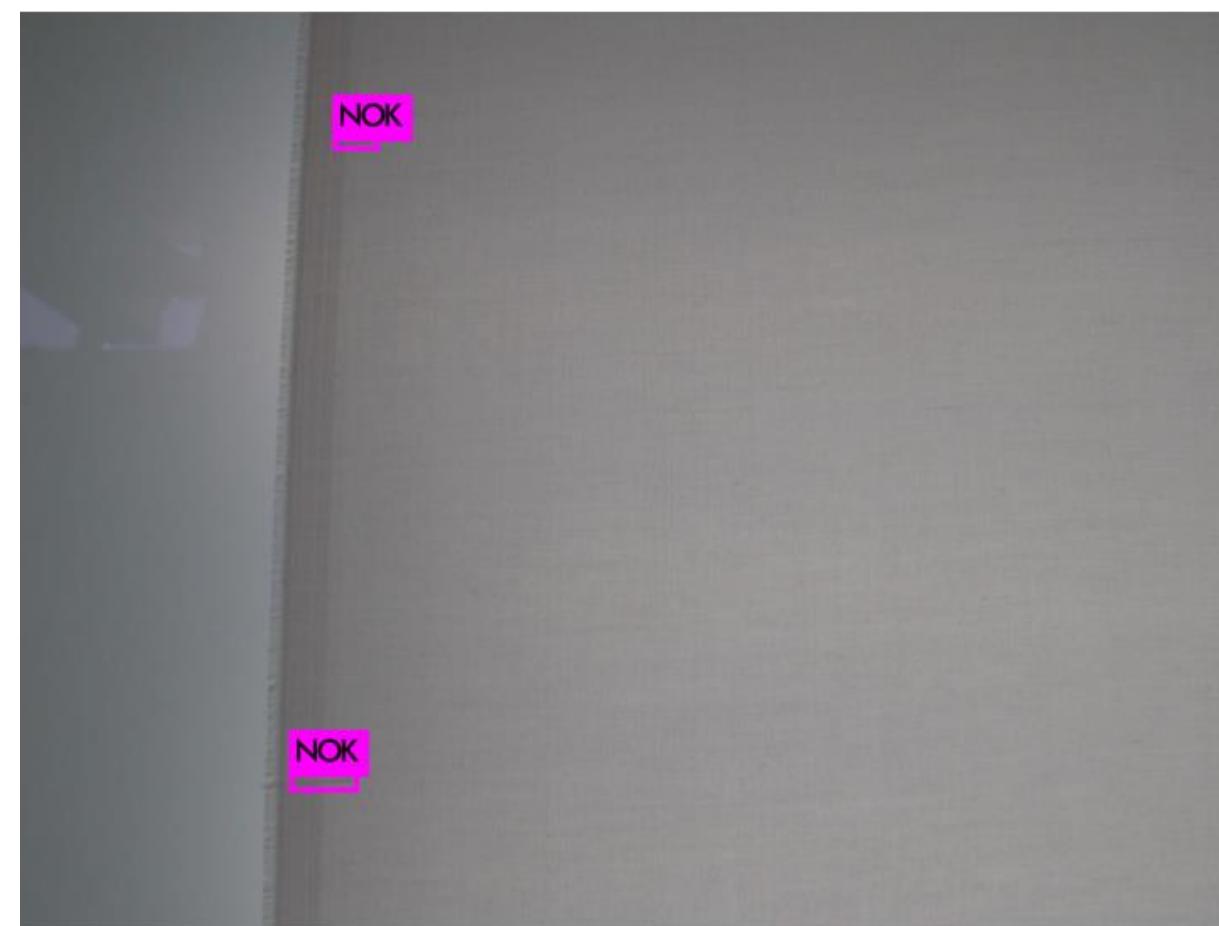
## YOLOv4 Sonucu



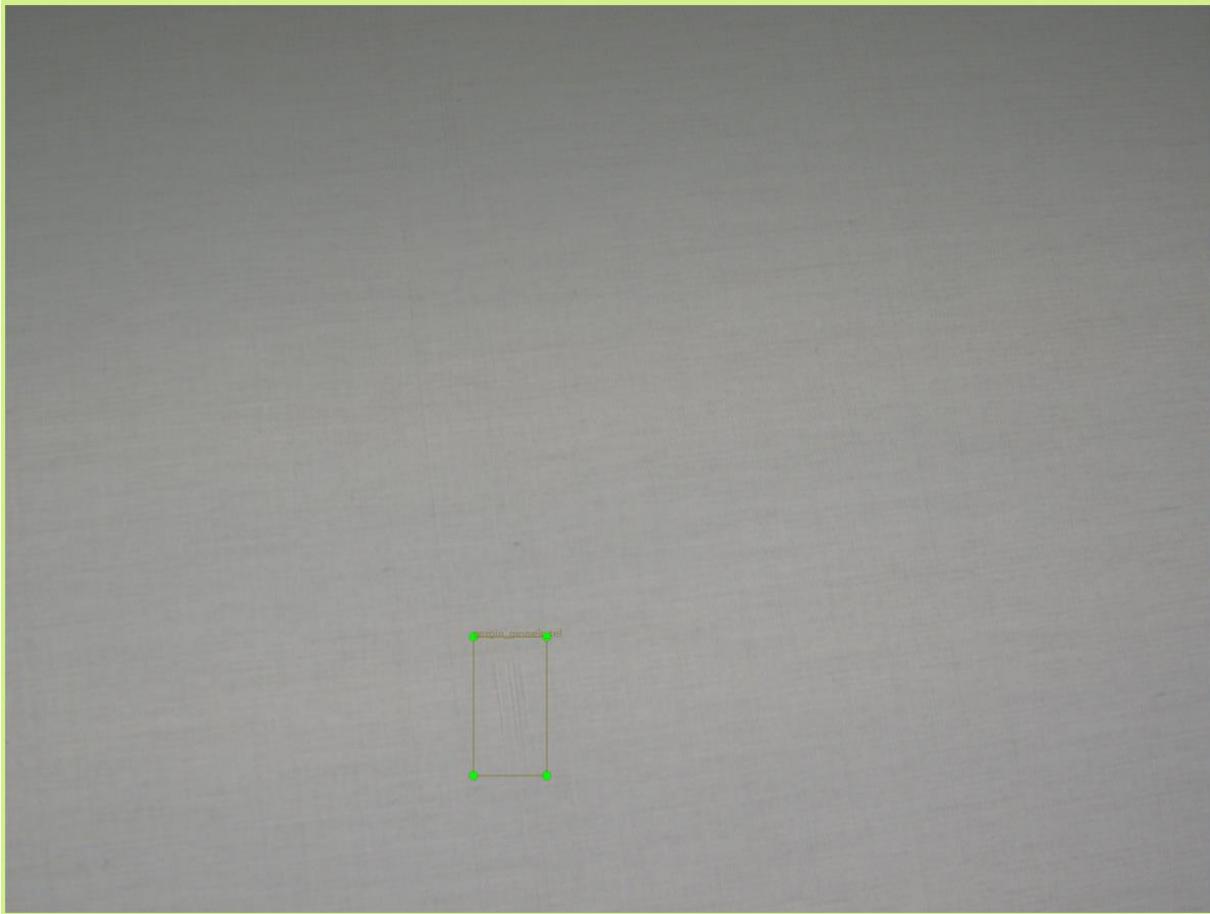
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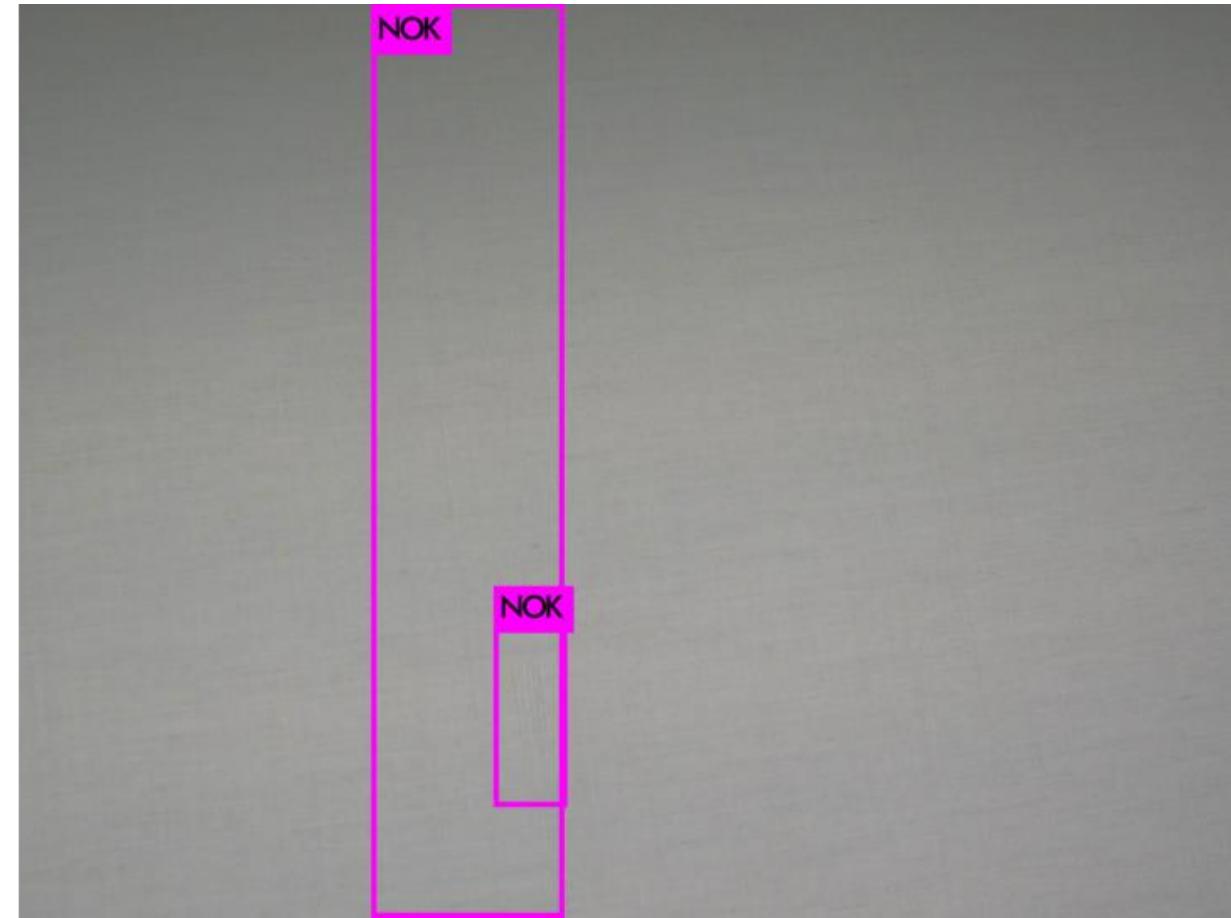
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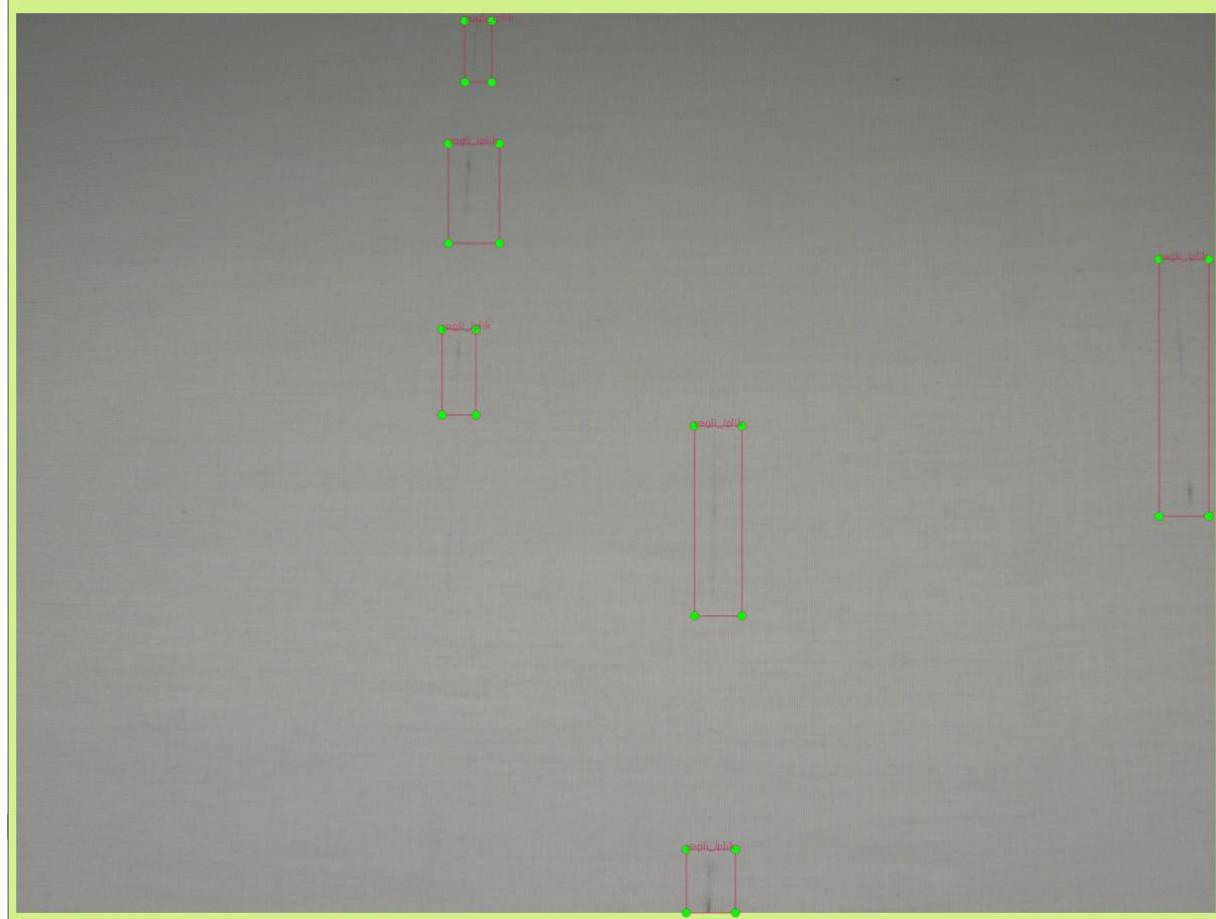
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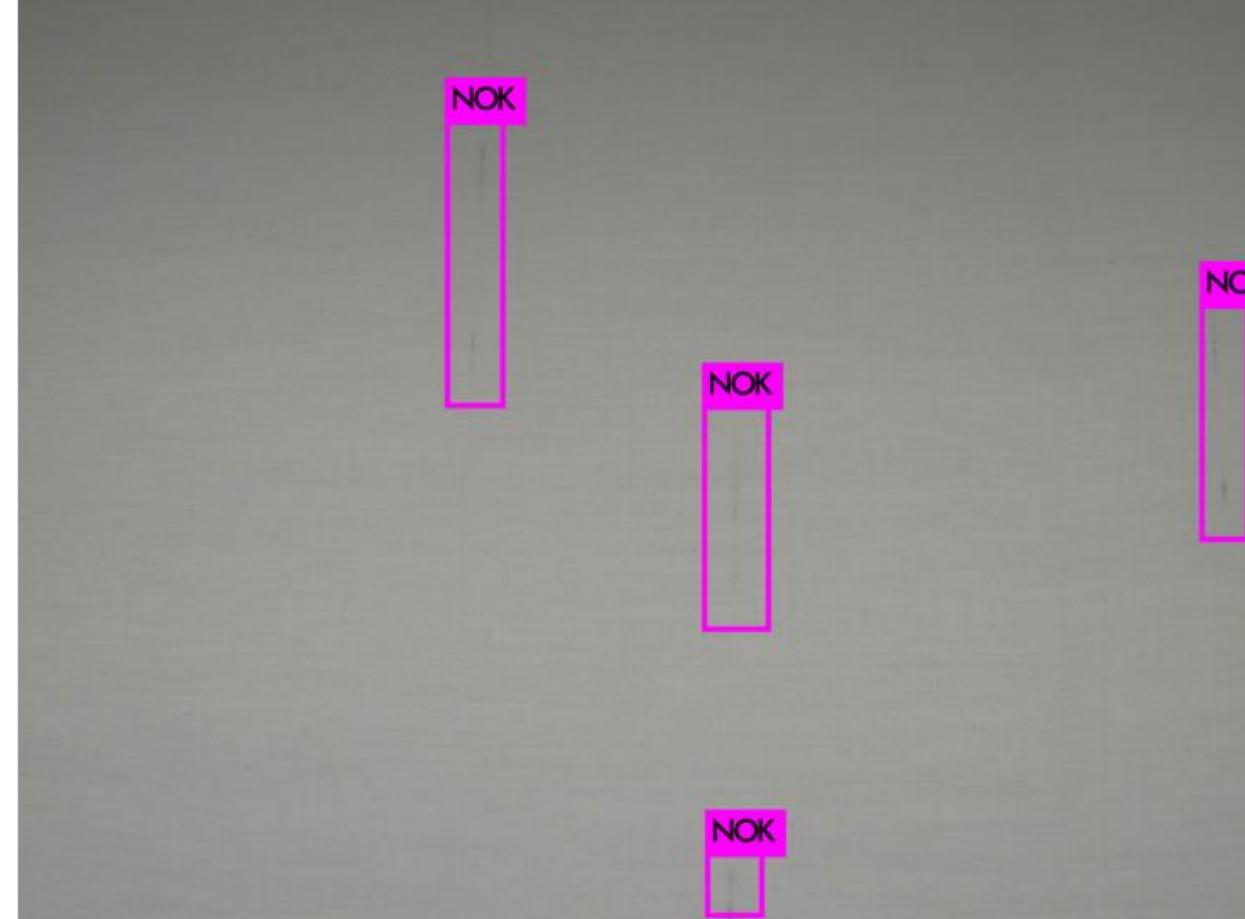
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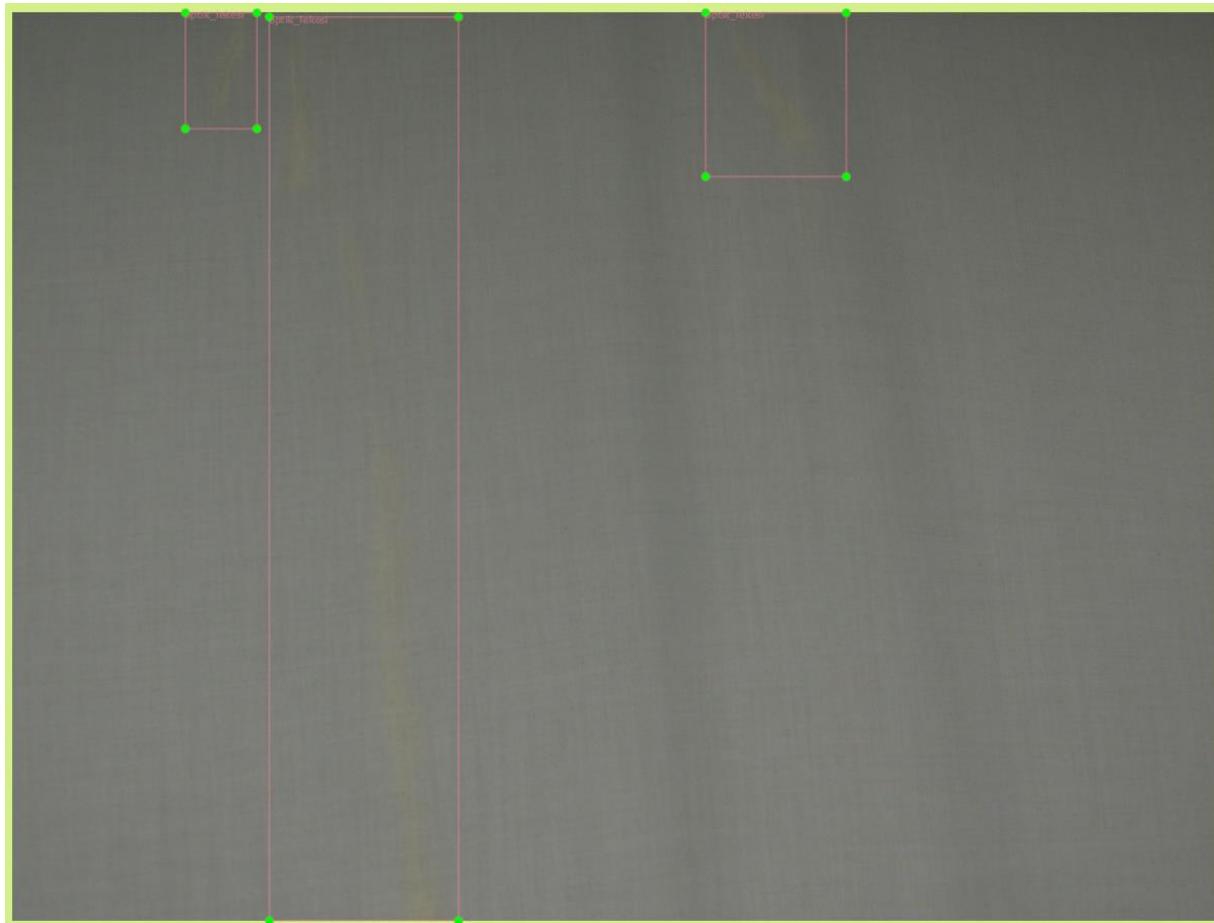
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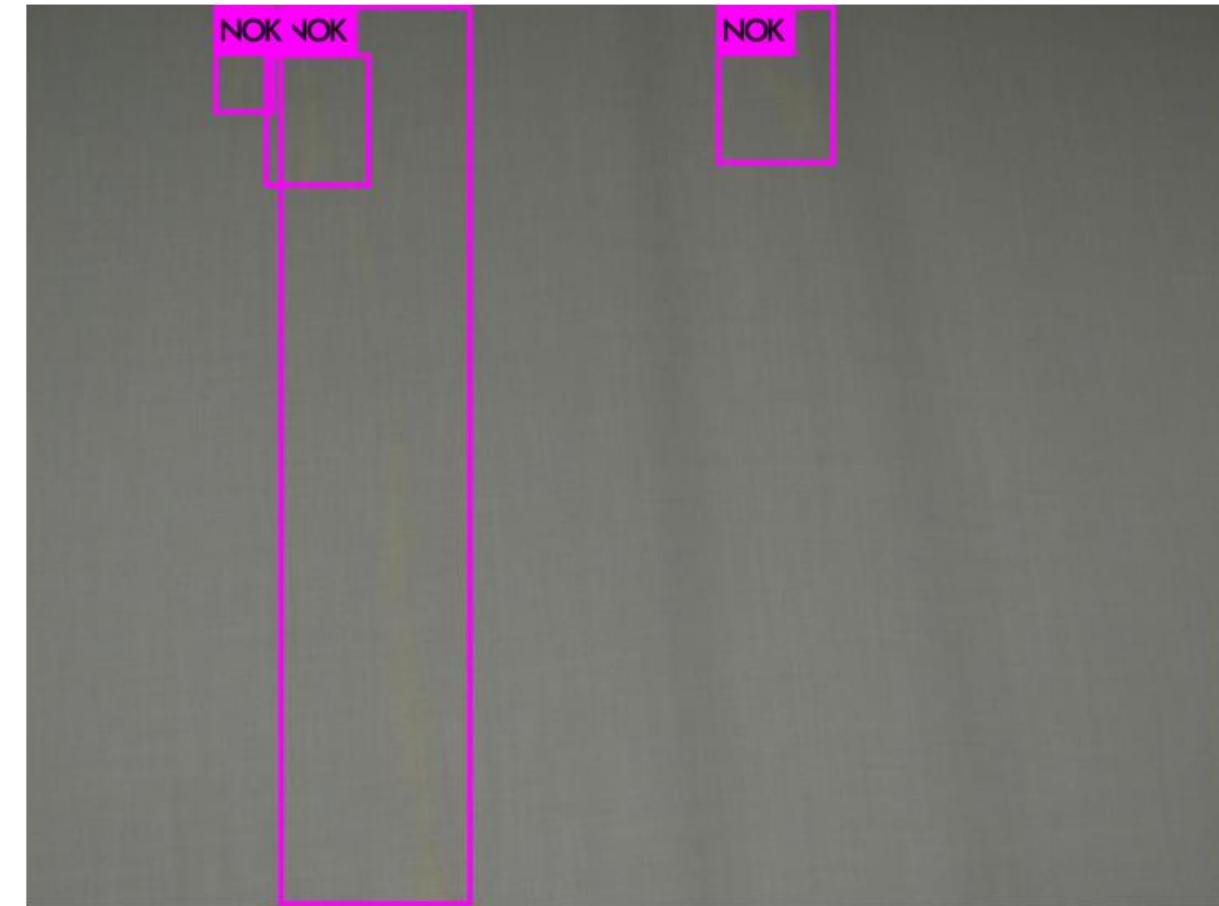
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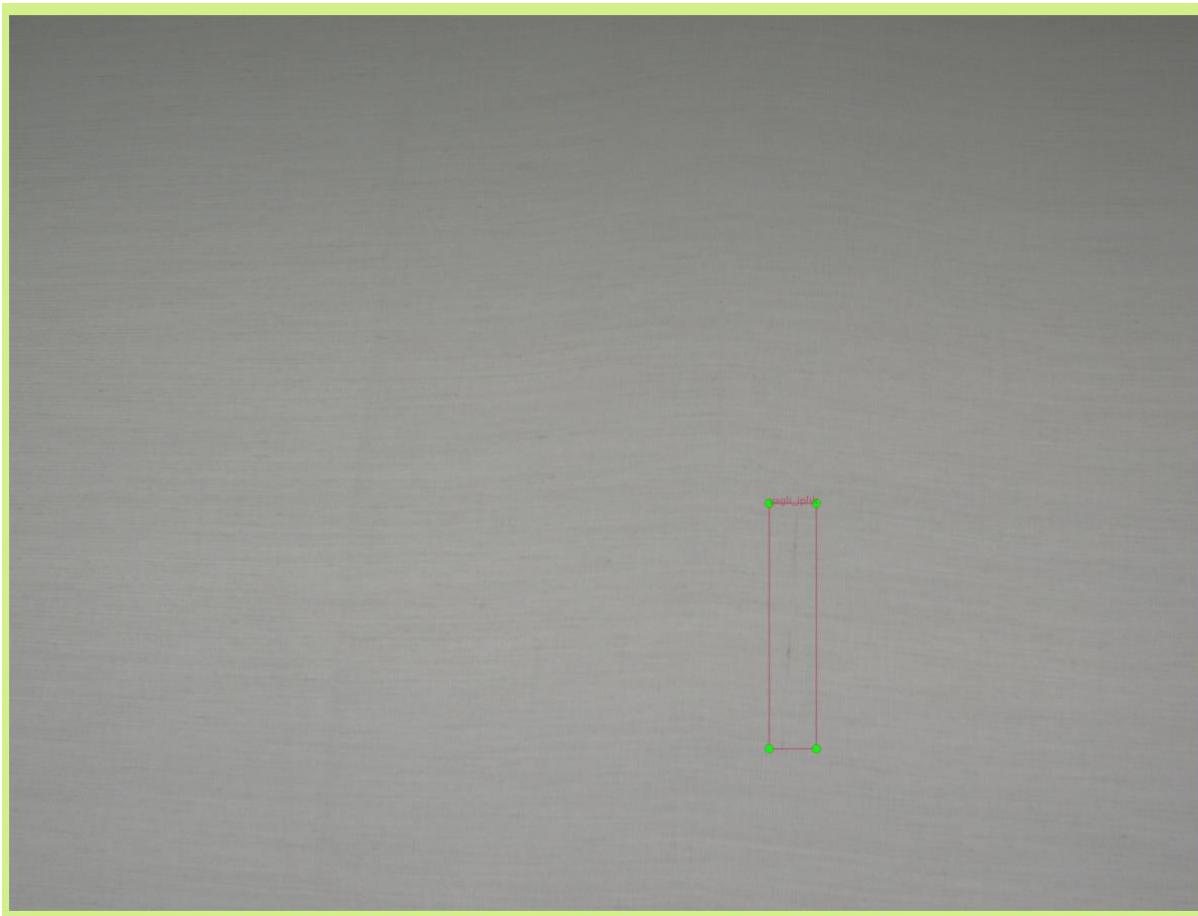
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## YOLOv4 Sonucu



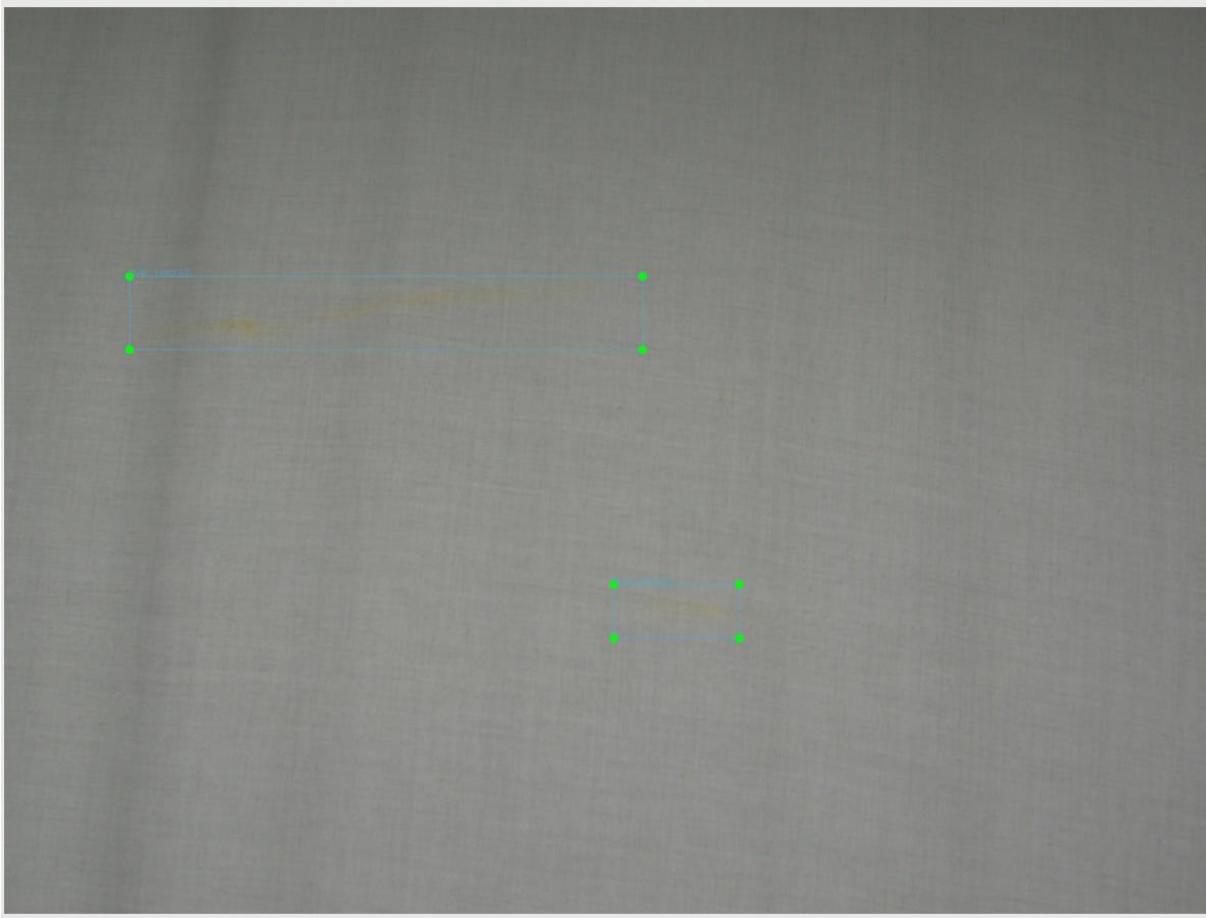
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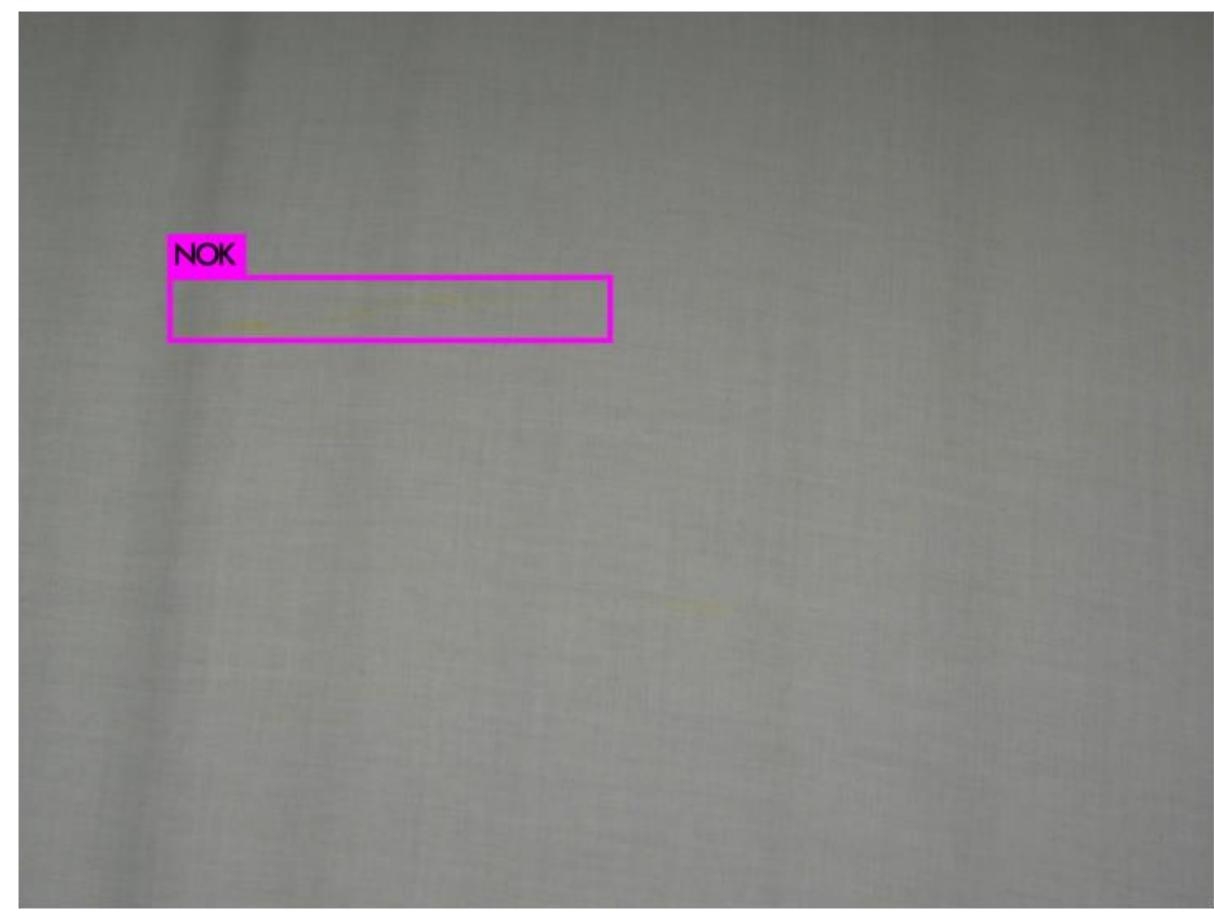
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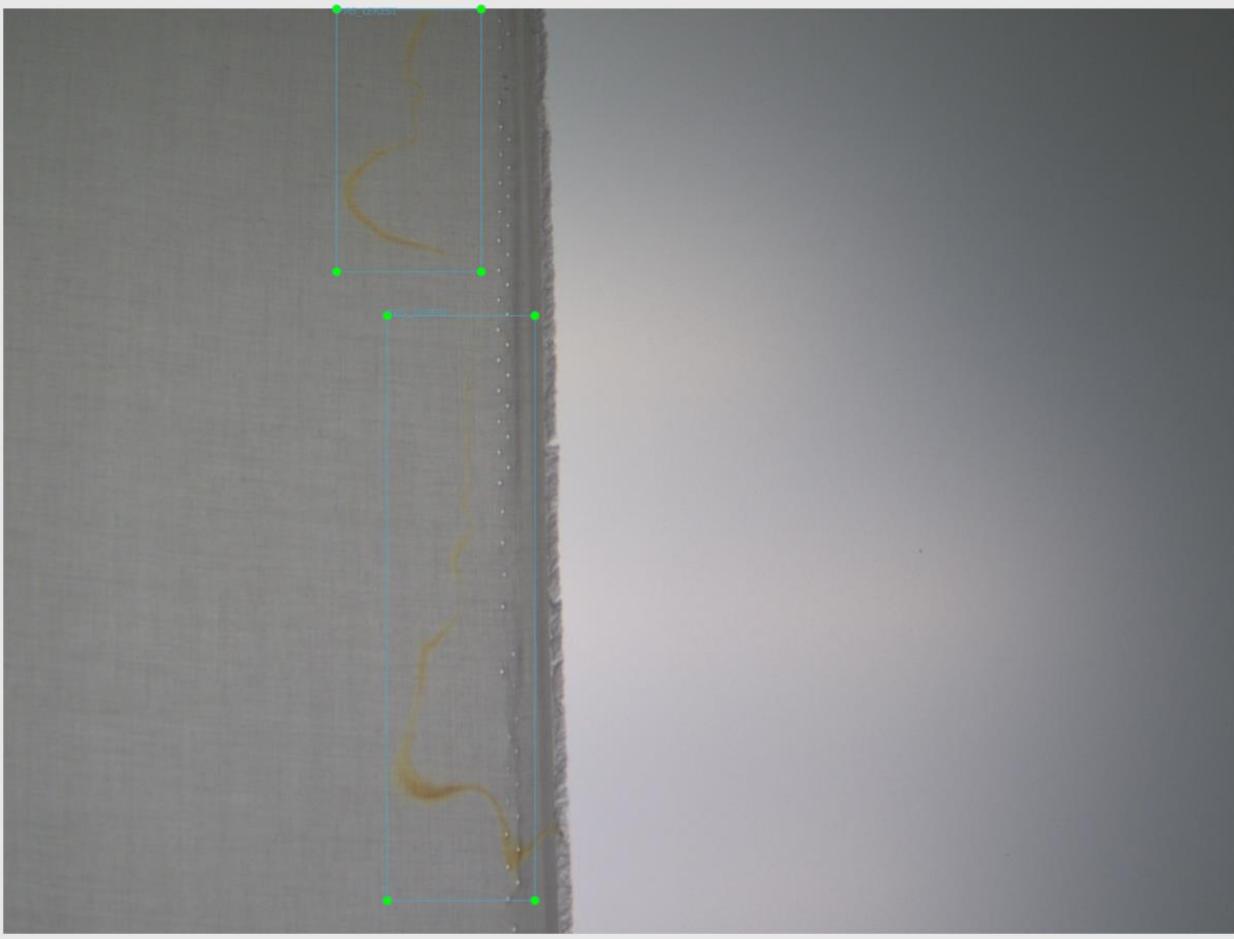
Asıl Veri



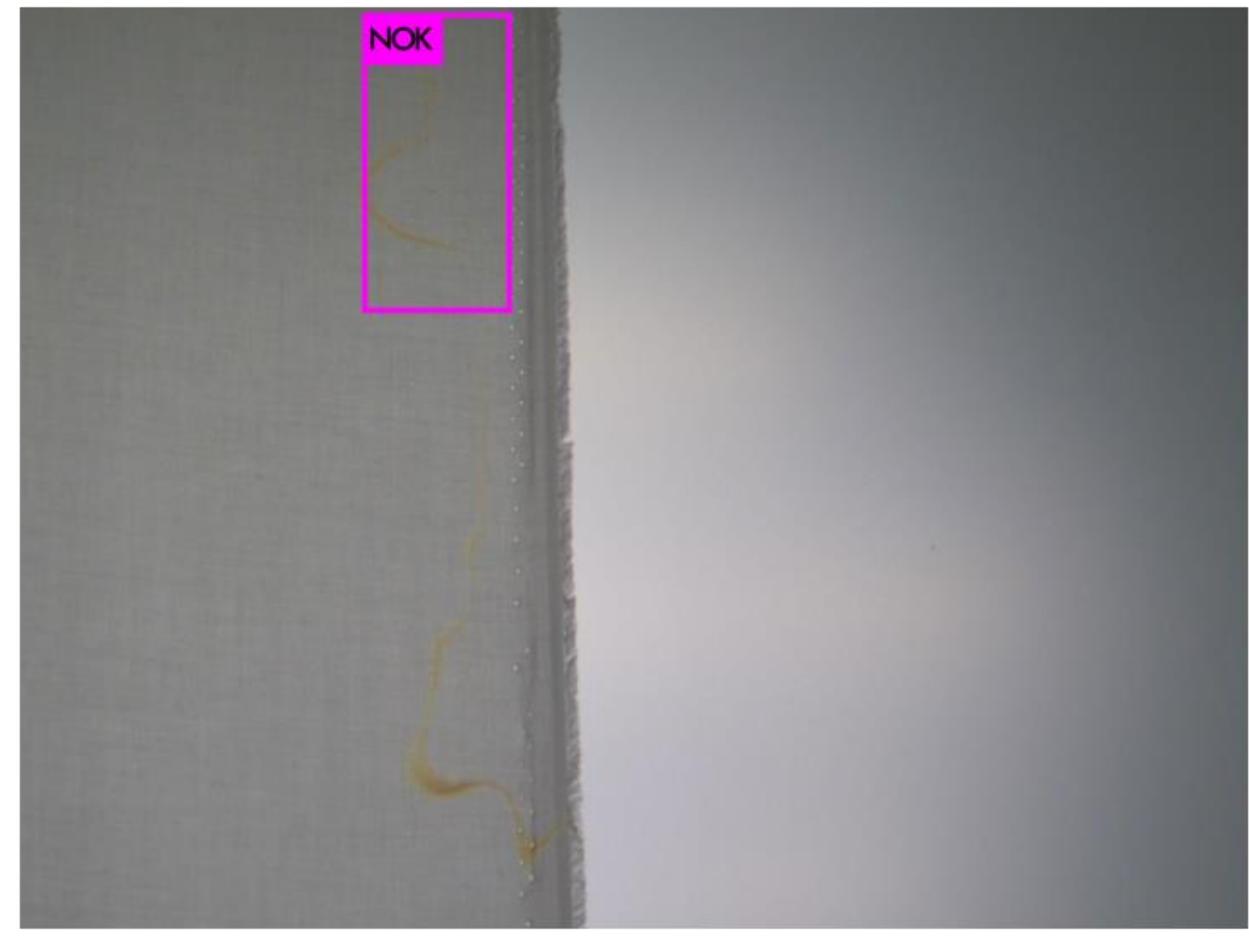
YOLOv4 Sonucu



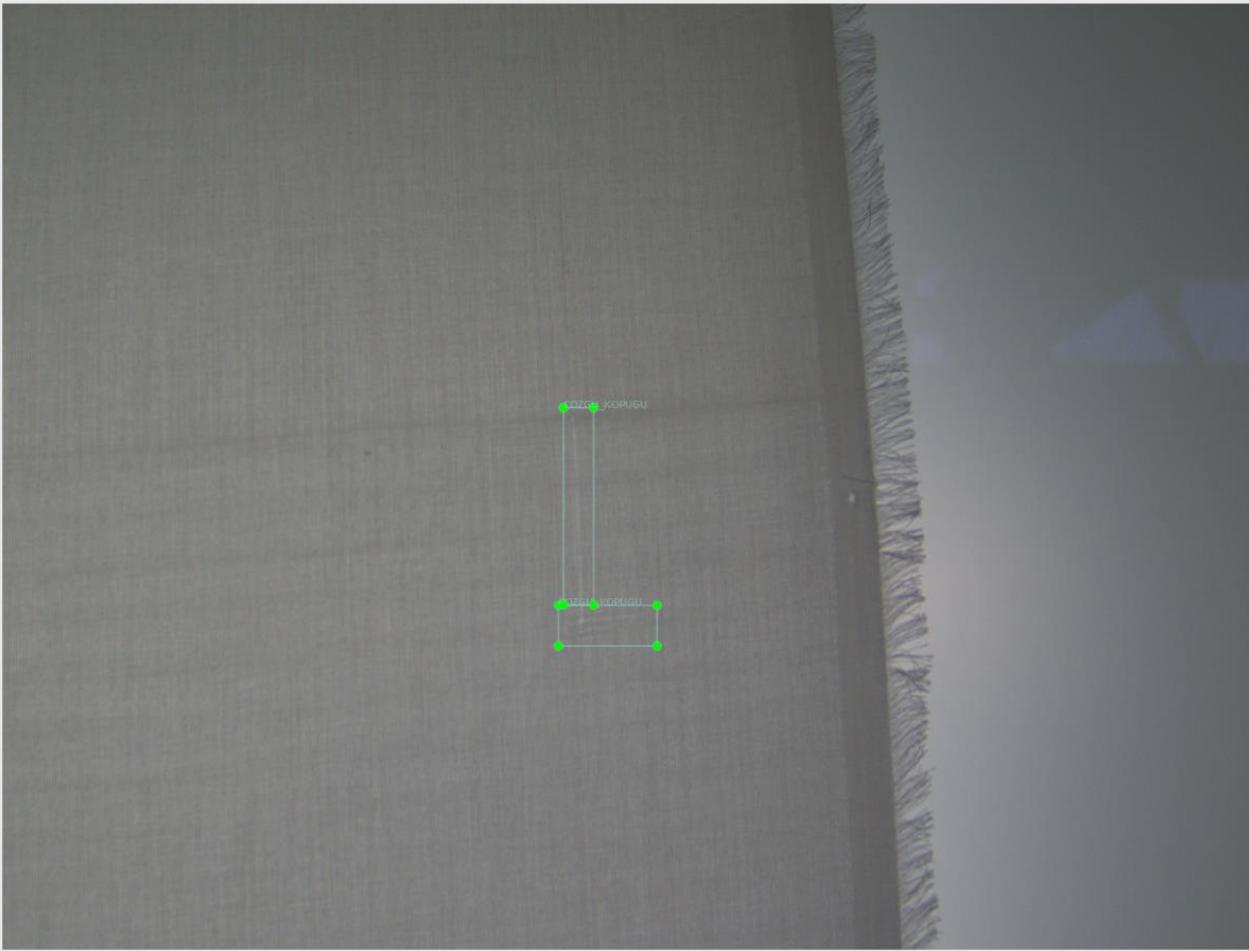
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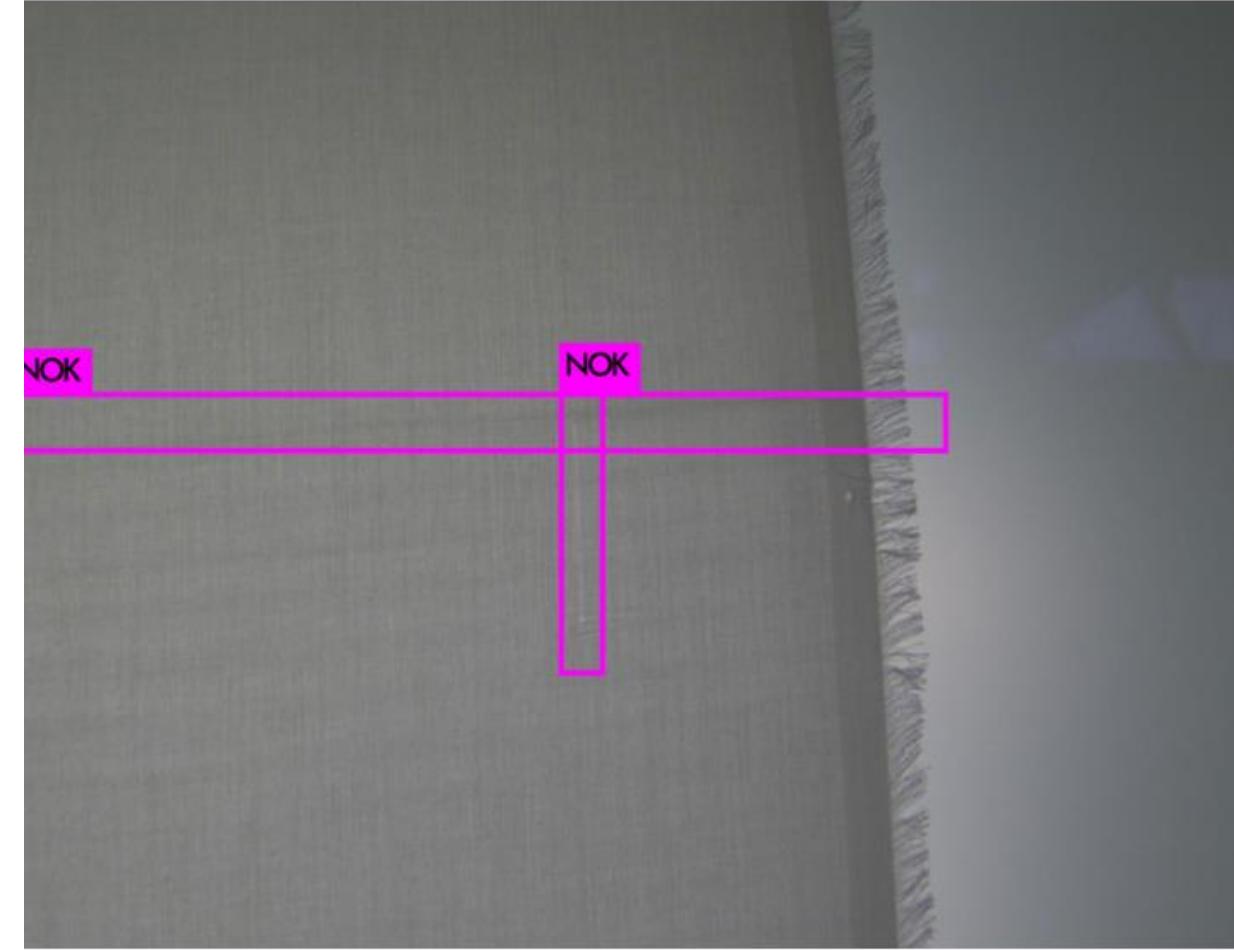
# YOLOv4 Sonucu



## Asıl Veri



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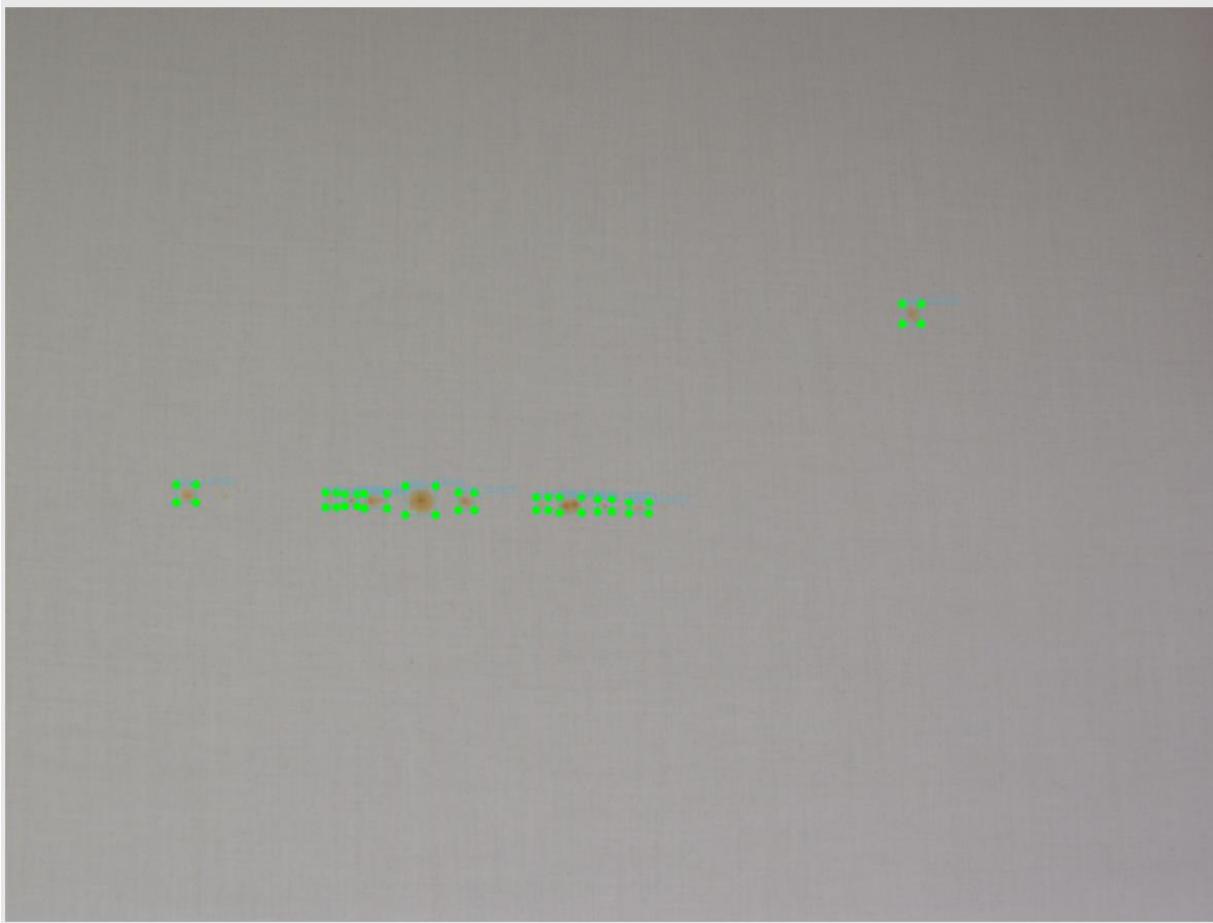
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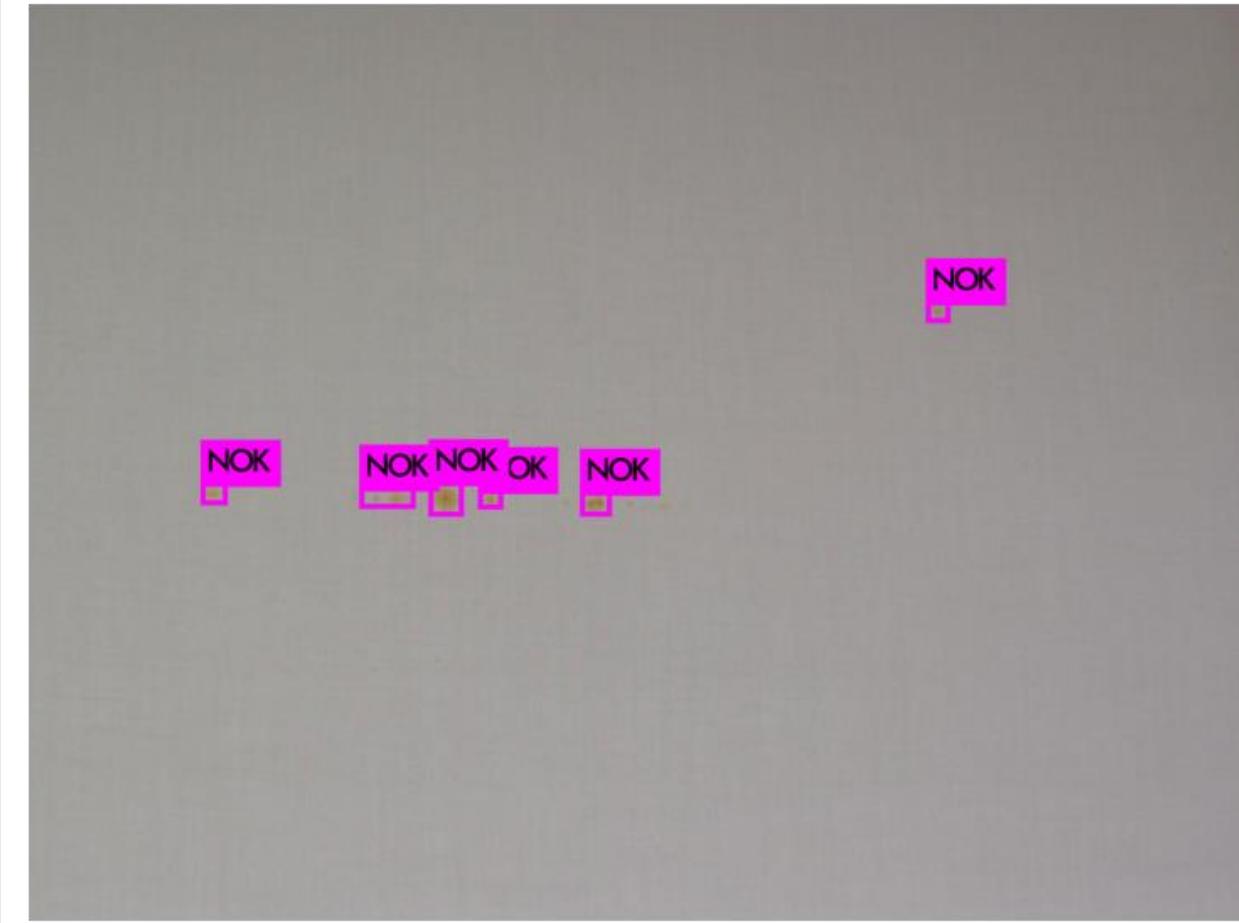
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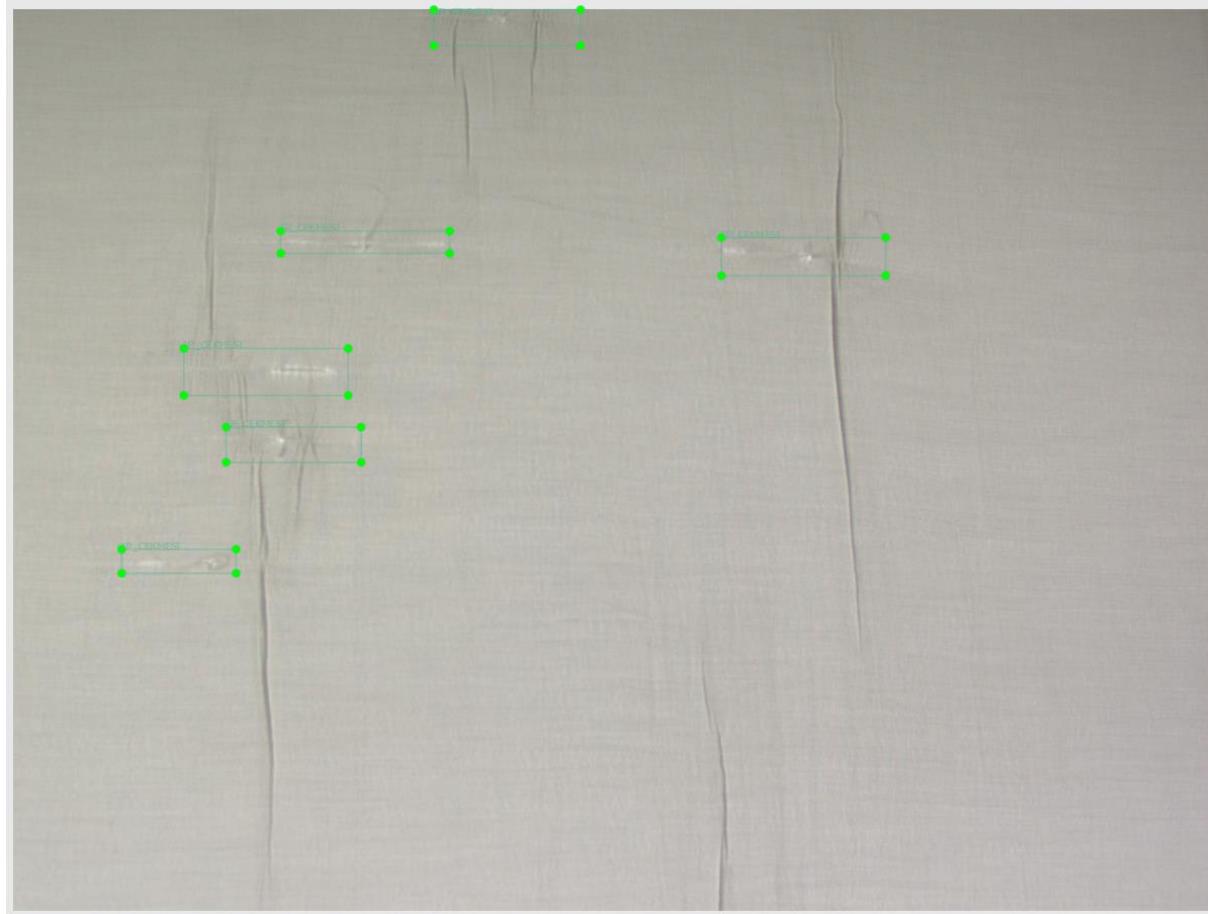
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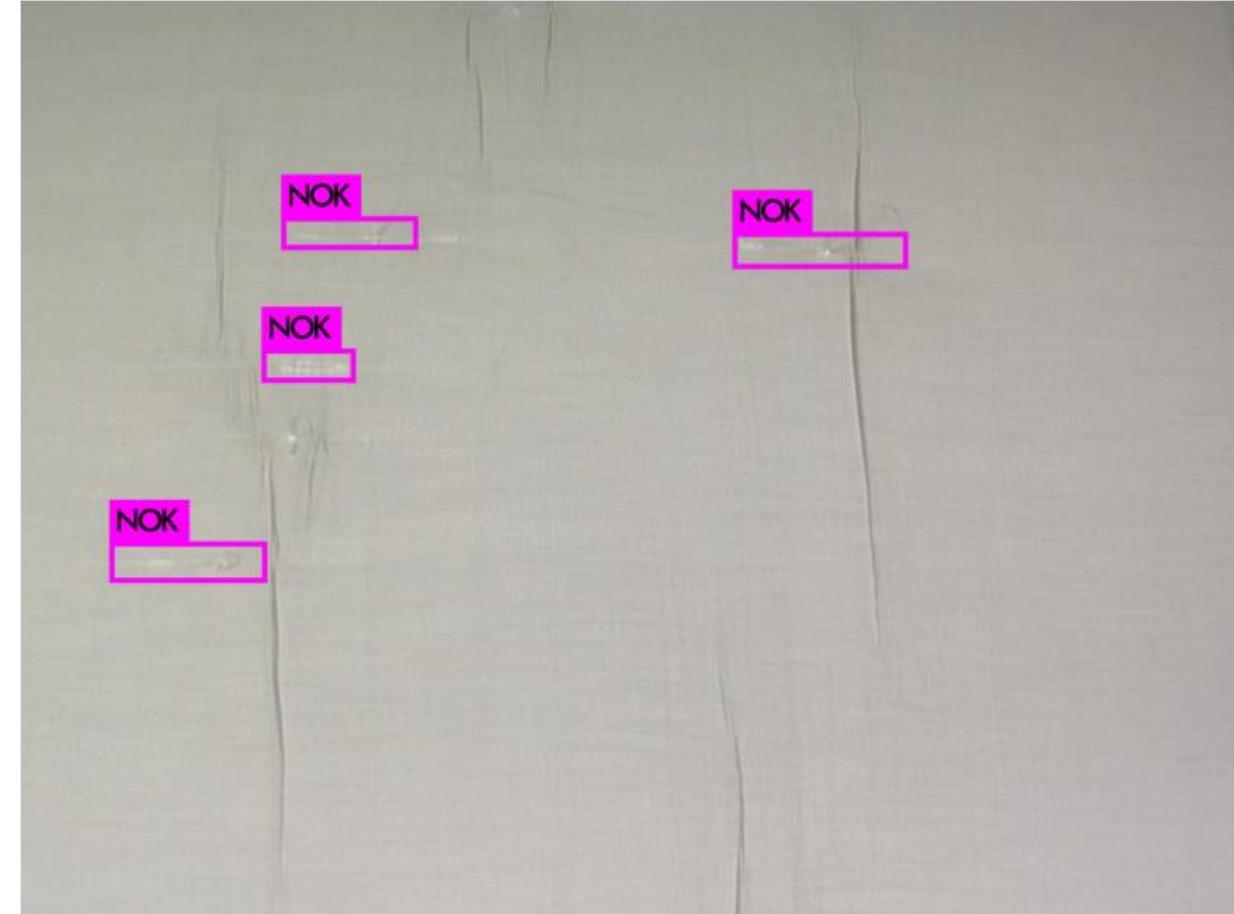
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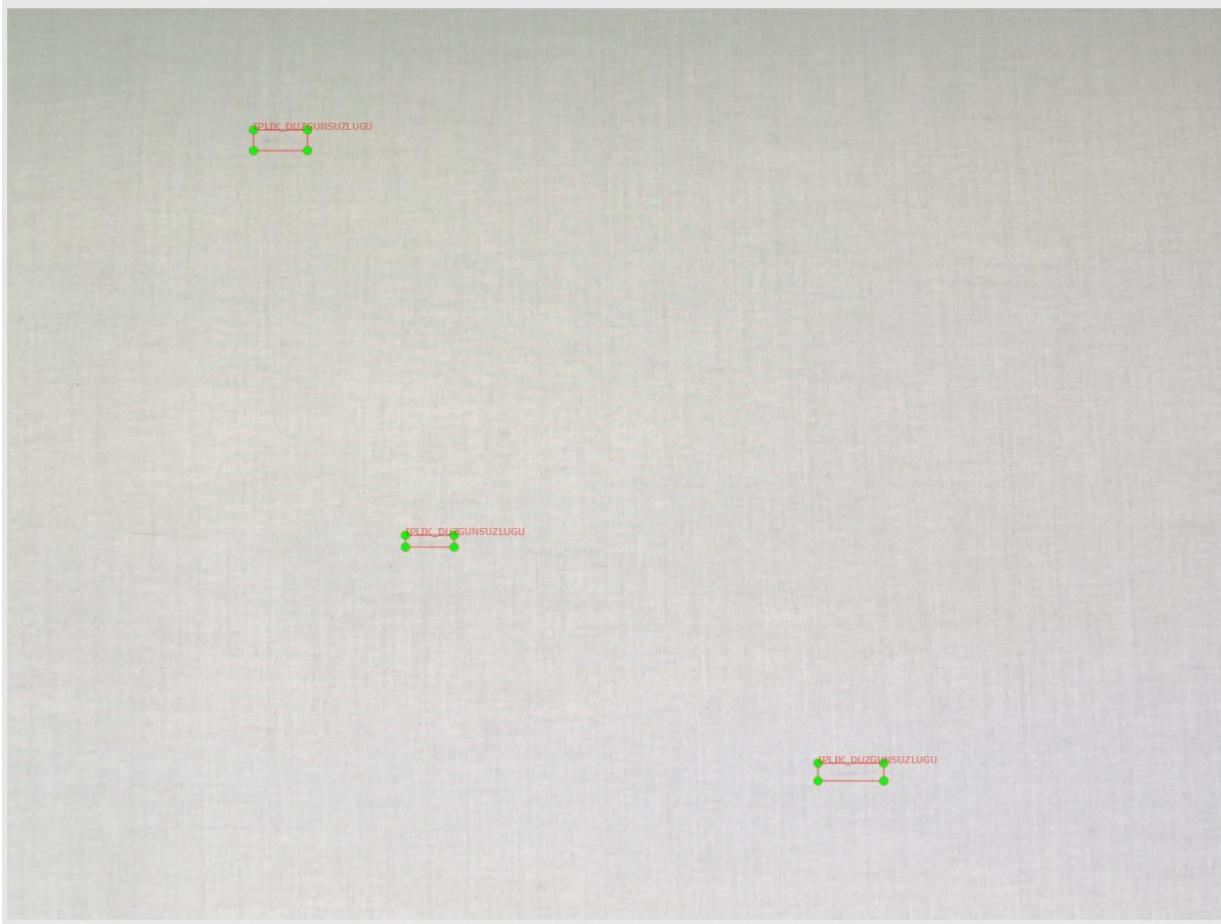
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