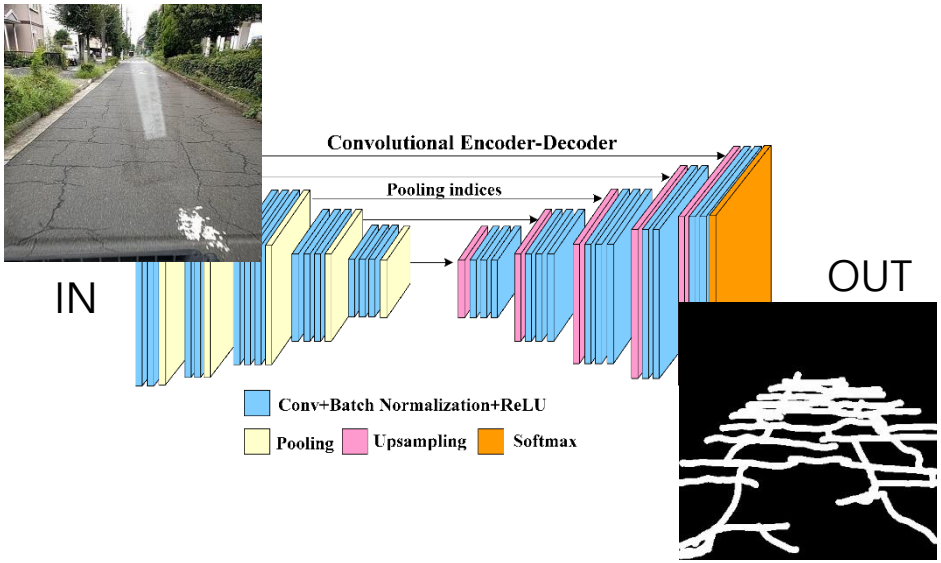
On going process

◆ Baseline performance index

- Basically Object detection algorithms that are used for experiment are RefineDet and YoloV3 that are created by Zhang et al. 2017 and Redmon et al. 2018 respectively.
- Therefore, we will focus on the performance of road crack segmentation
- The performance of typical Auto-Encoder(AE) algorithms are our baseline.



<Baseline: Auto-encoder method>

AE algorithm	Pix. Acc.	M. IoU	F. IoU
Deep LabV3+ (MobileNet)	97.32	68.57	95.47
Deep LabV3+ (ResNet)	97.49	67.55	95.58
Deep LabV3+ (XceptionNet)	97.58	69.41	95.77
LinkNet	96.77	64.69	94.71
SegNet	96.82	58.77	94.41
UNet	97.69	71.08	95.99

Potential issue to discuss

◆ **Proposed method for joint deep learning**

• Most object detection algorithms have feature pyramid stage for scale-invariant detection. It means that most backbone networks have hierarchical features.

• **Based on those hierarchical features, segmentation algorithm MAY work.**