

Super Resolution:

A Mobile Binoculars App

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Problem

- Goal: create phone-based binoculars
- Issue: digital cameras do not feature lossless upscaling

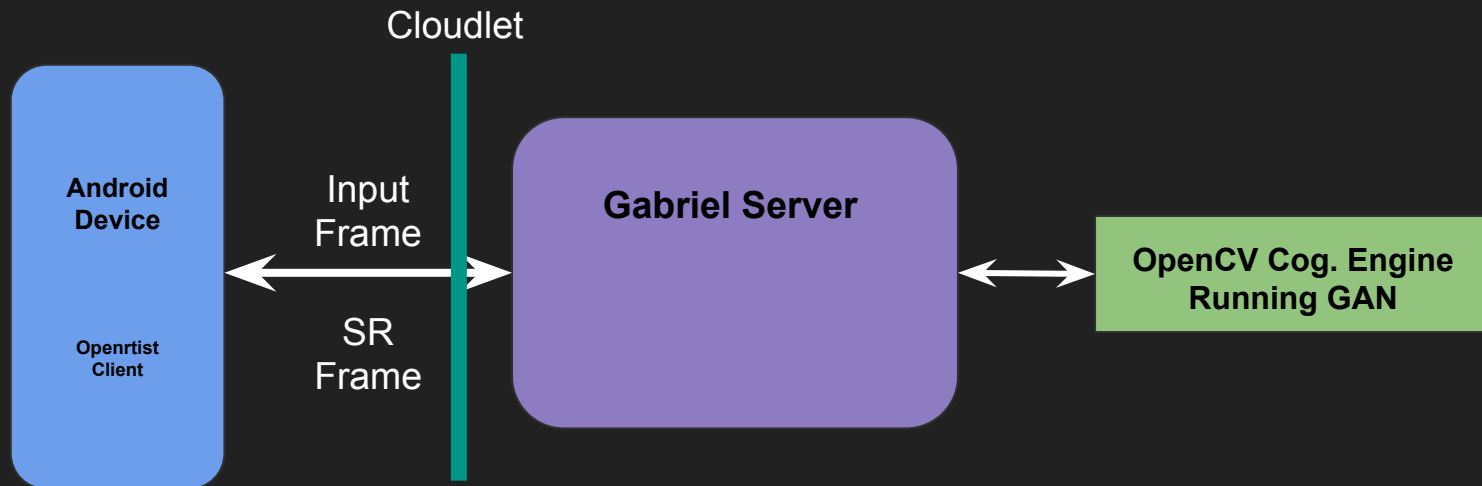
Solution: GANs (Generative Adversarial Networks)

- Super resolution GANs generate high-res images off learned image data
- Can zoom in on a digital image, then run it through a GAN to “enhance”
- However, GANs have high compute cost

GANs and the Edge

- To solve high compute limitations, offload to edge
- Send frames to a cloudlet, run GAN on the cloudlet, then send back the result

System Architecture



Limitations of GANs

- GANs perform worse as input resolution decreases
- Best performing GANs are extremely slow (EDSR)
- See laptop for results