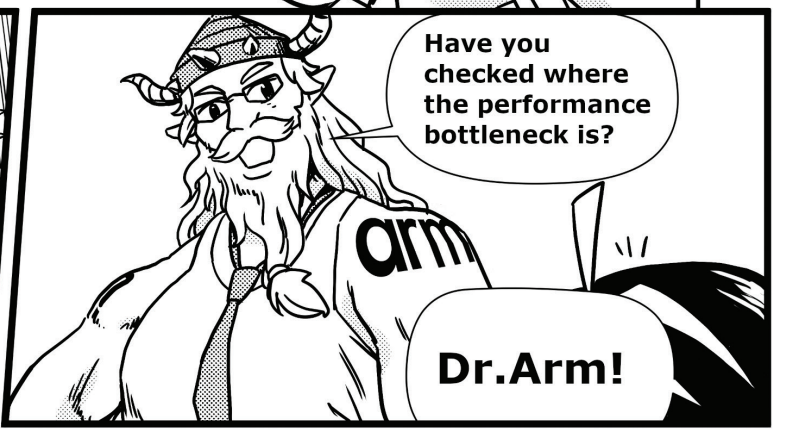
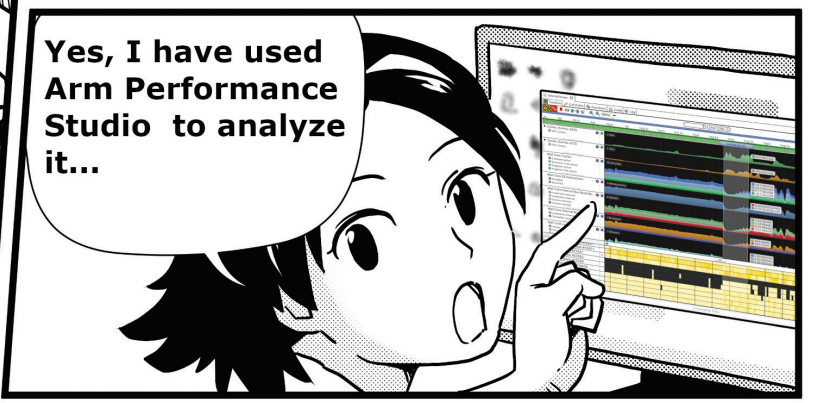
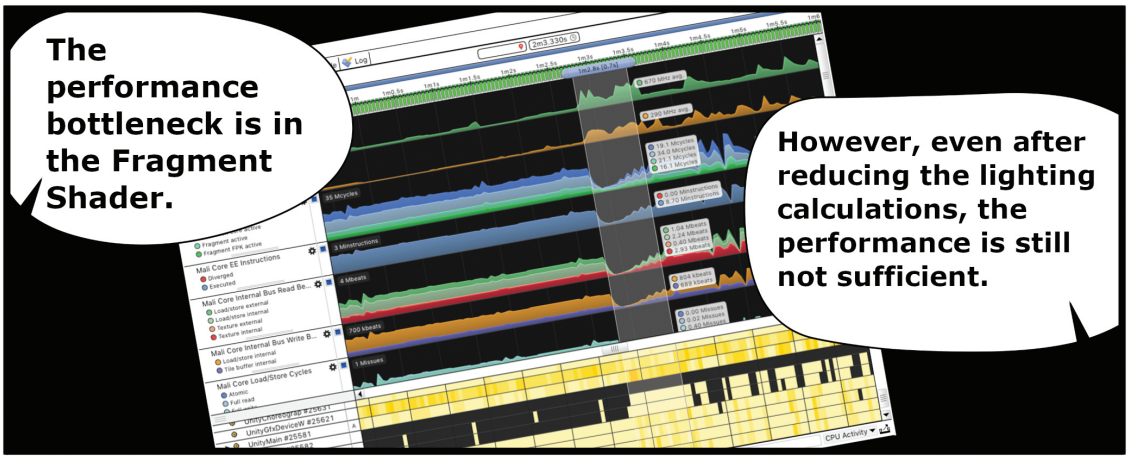
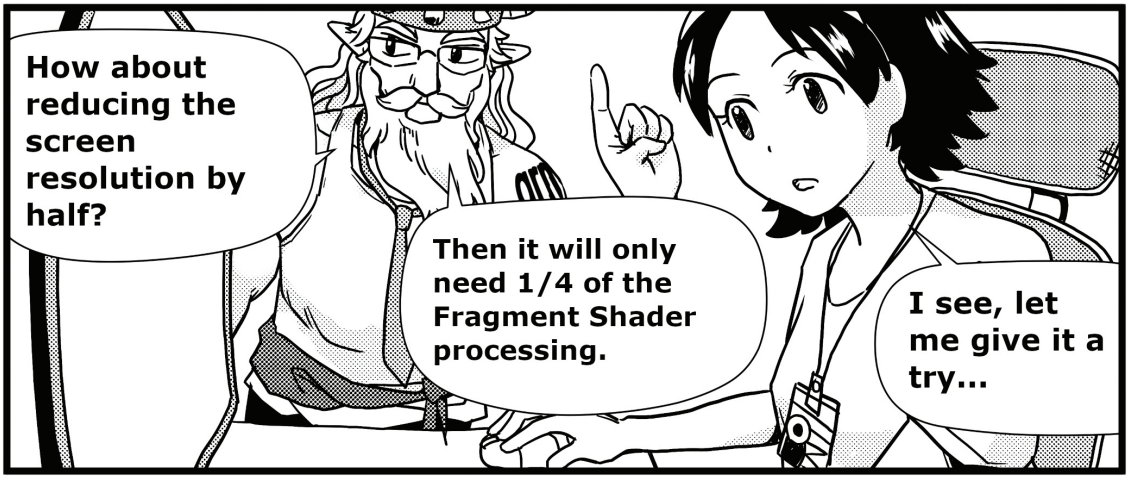
Arm Accuracy Super Resolution
arm
Accuracy
Super Resolution
MORI

# Arm Accuracy Super Resolution

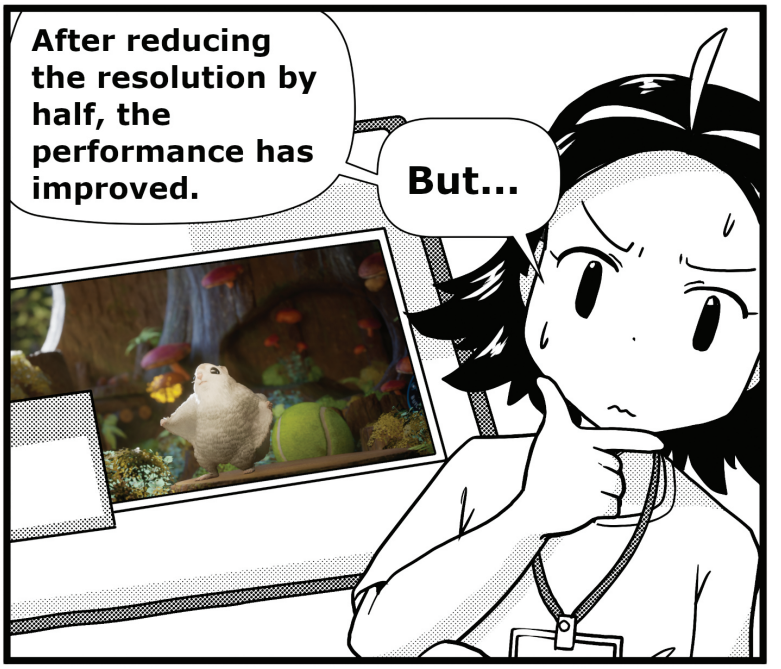


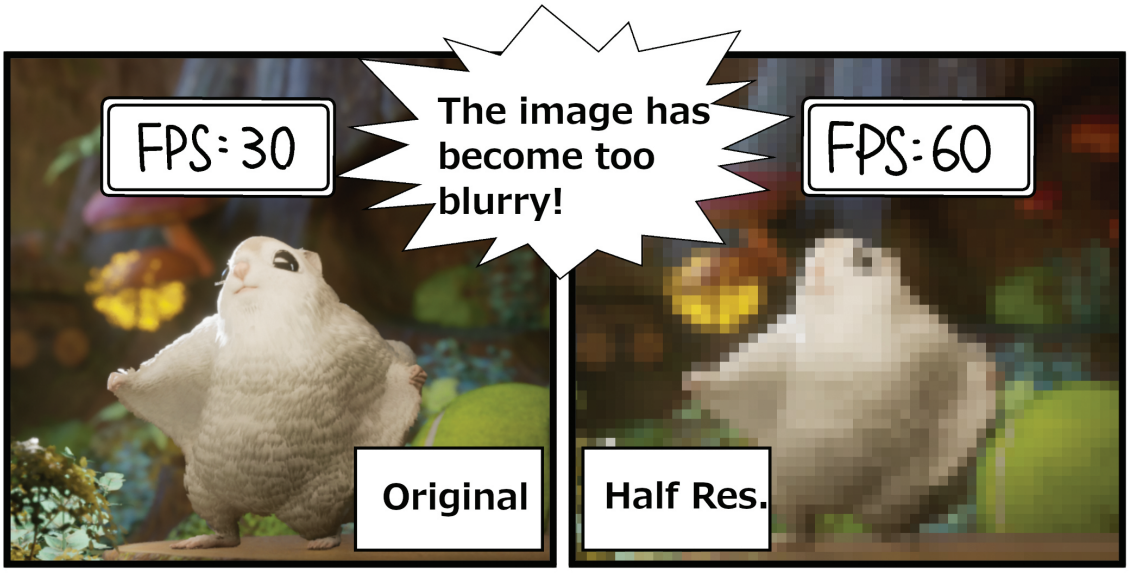



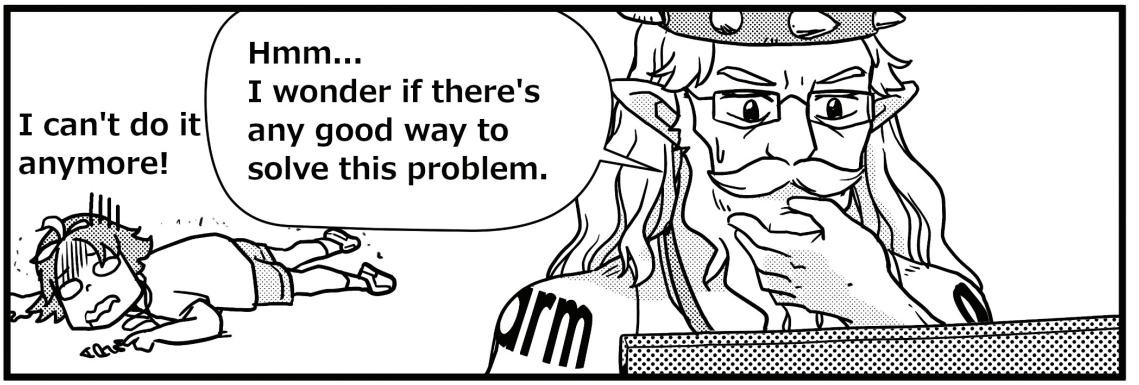

The performance bottleneck is in the Fragment Shader.
However, even after reducing the lighting calculations, the performance is still not sufficient.

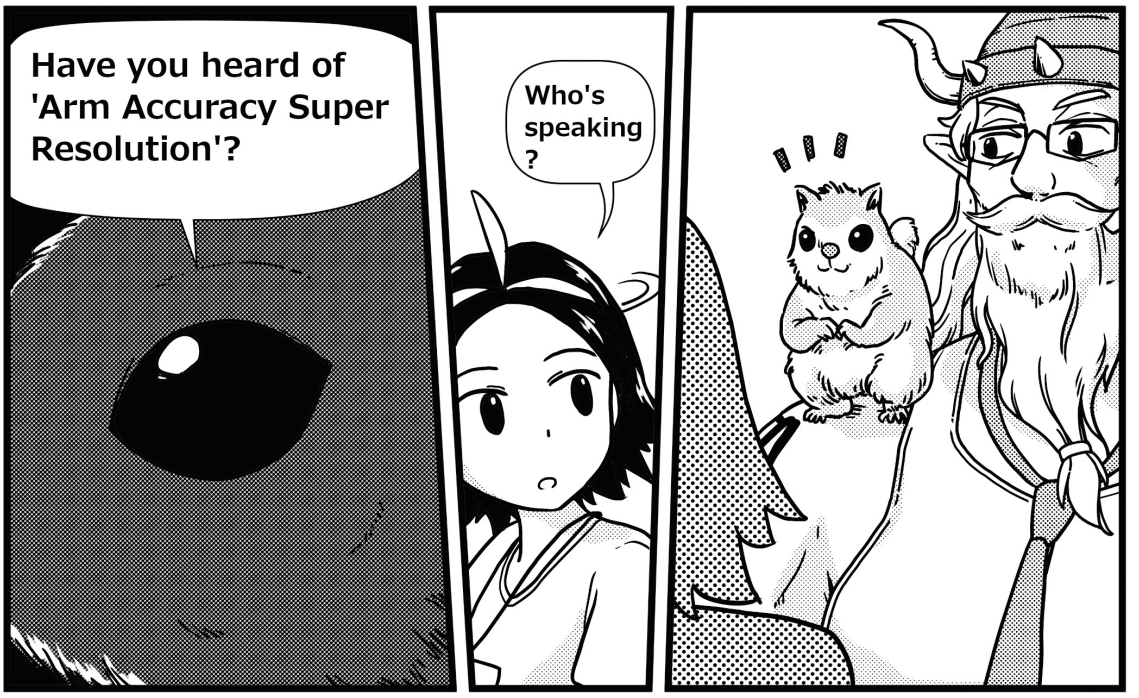

How about reducing the screen resolution by half?
Then it will only need 1/4 of the Fragment Shader processing.
I see, let me give it a try...

After a while ...

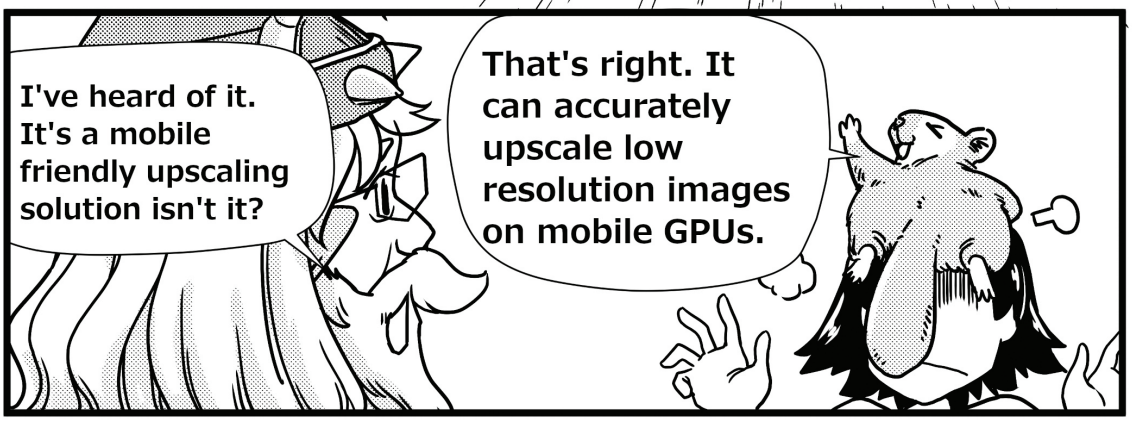

After reducing the resolution by half, the performance has improved.
But...

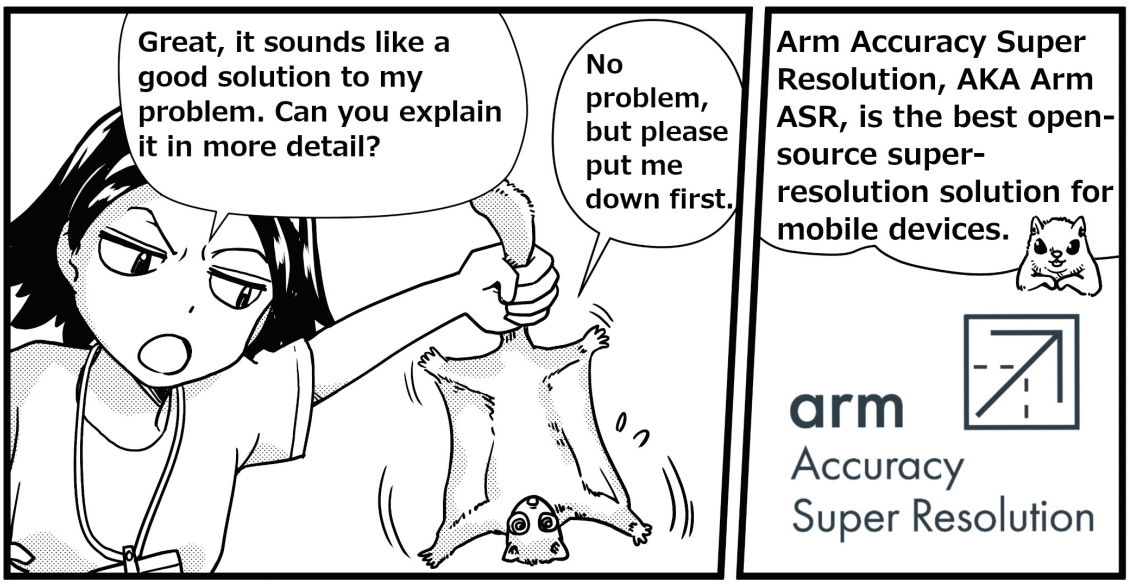

FPS: 30
The image has become too blurry!
FPS: 60
Original
Half Res.


I can't do it anymore!
Hmm...
I wonder if there's any good way to solve this problem.
arm

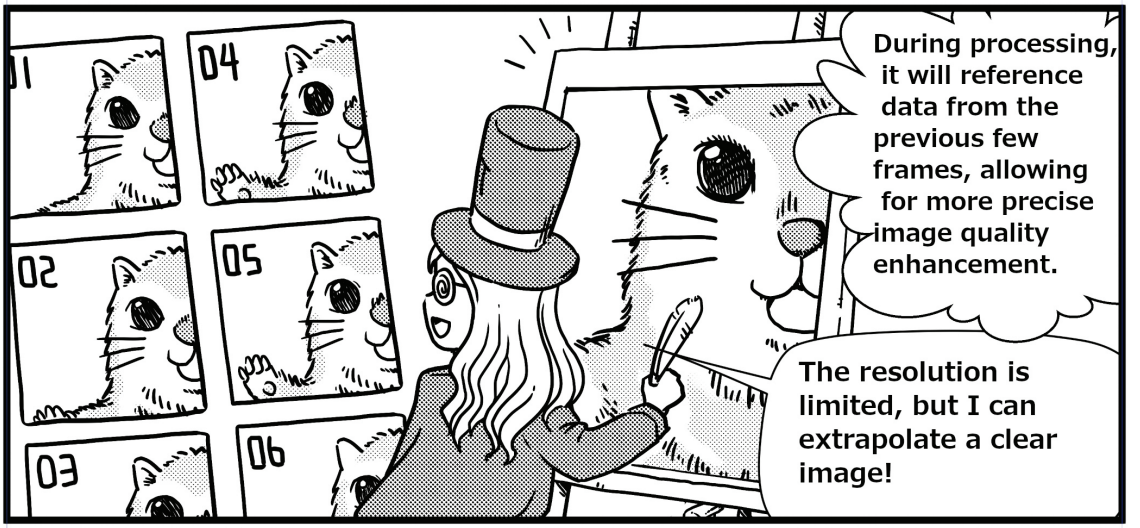

Have you heard of 'Arm Accuracy Super Resolution'?
Who's speaking ?

Wow! A talking mouse!?
I'm not a mouse, I'm a flying squirrel! My name is Mori.


I've heard of it. It's a mobile friendly upscaling solution isn't it?
That's right. It can accurately upscale low resolution images on mobile GPUs.


Great, it sounds like a good solution to my problem. Can you explain it in more detail?
No problem, but please put me down first.
Arm Accuracy Super Resolution, AKA Arm ASR, is the best open-source super-resolution solution for mobile devices.
arm
Accuracy
Super Resolution

The rendering image resolution can be reduced by half, so only 1/4 of the Fragment Shader workload is needed!
Just a bit of work , it's really relaxing~


01
04
02
05
03
06
During processing, it will reference data from the previous few frames, allowing for more precise image quality enhancement.
The resolution is limited, but I can extrapolate a clear image!

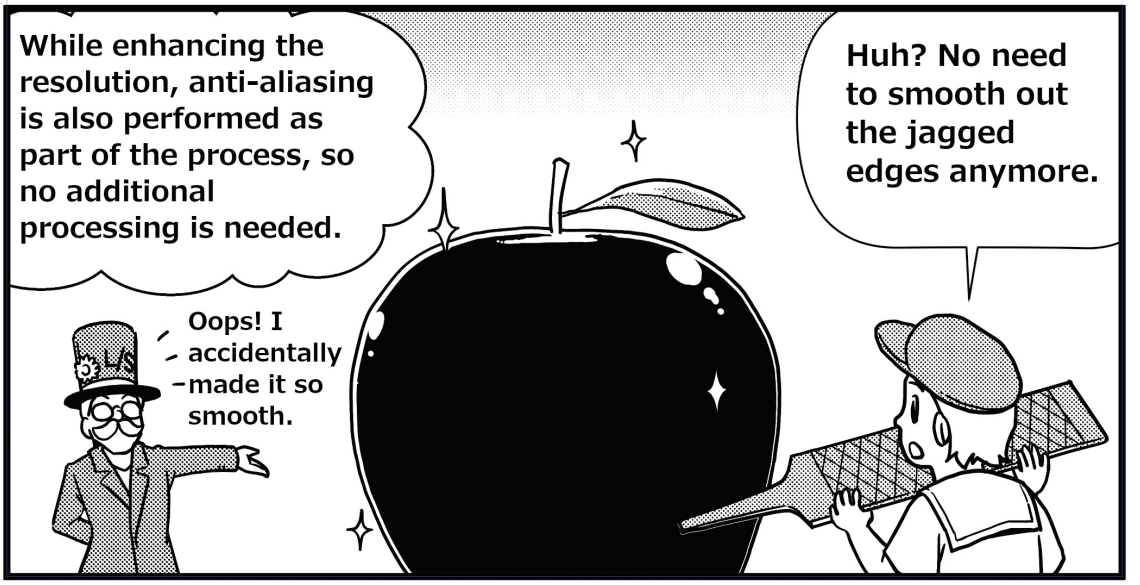
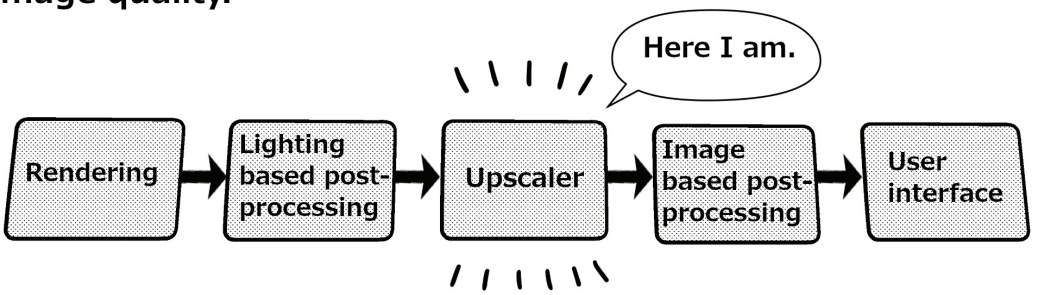
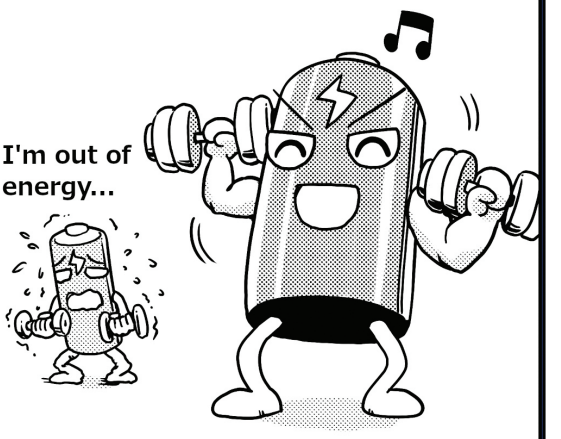

While enhancing the resolution, anti-aliasing is also performed as part of the process, so no additional processing is needed.
Oops! I accidentally made it so smooth.
Huh? No need to smooth out the jagged edges anymore.

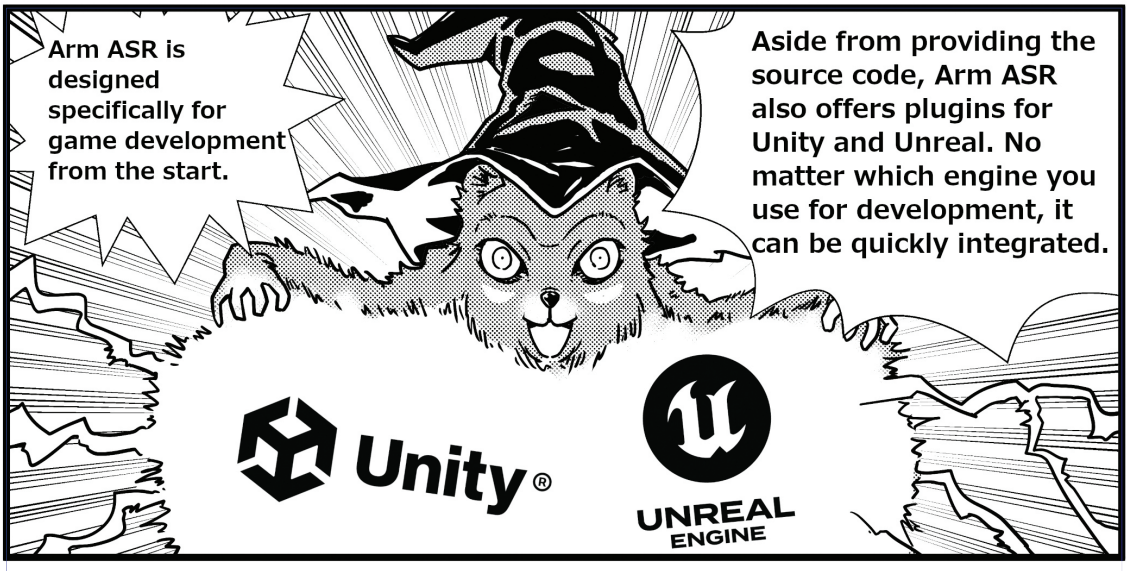
Image-based post-processing can be completed after the resolution is enhanced, resulting in better post-processing image quality.

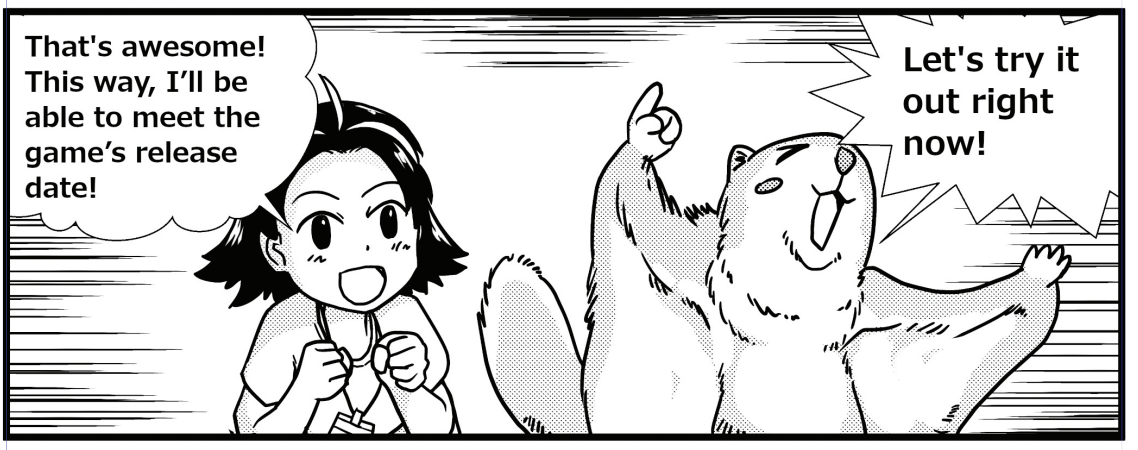


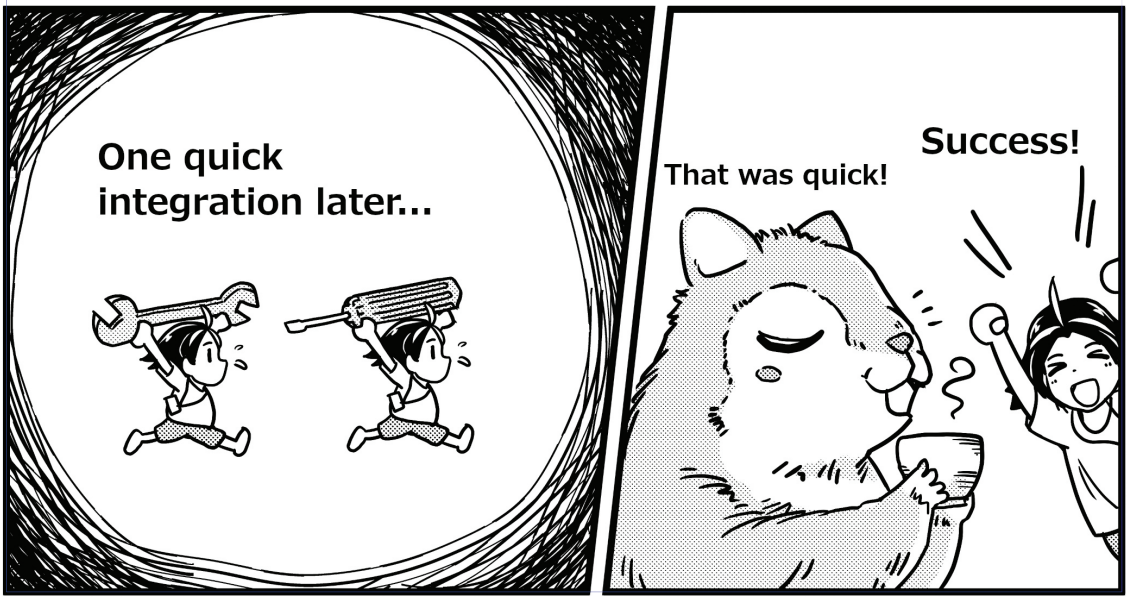

Arm ASR is optimized for mobile devices, reducing computational load and memory bandwidth requirements.

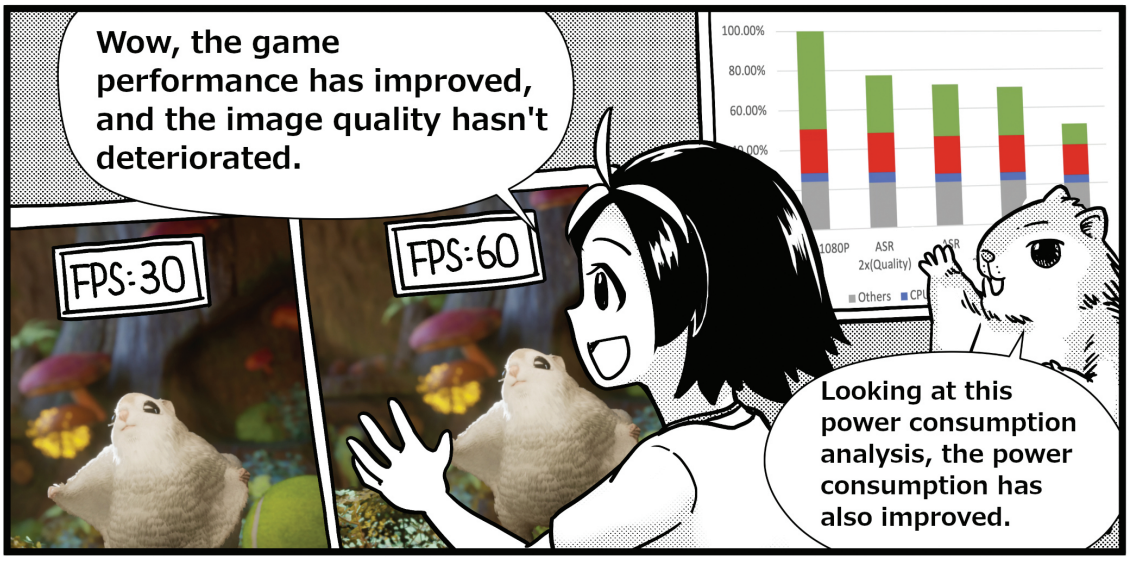
Moreover, Arm ASR can generate near-original resolution image quality while consuming less power.




Arm ASR is designed specifically for game development from the start.
Aside from providing the source code, Arm ASR also offers plugins for Unity and Unreal. No matter which engine you use for development, it can be quickly integrated.
Unity®
UNREAL ENGINE


That's awesome! This way, I'll be able to meet the game's release date!
Let's try it out right now!


One quick integration later...
That was quick!
Success!


Wow, the game performance has improved, and the image quality hasn't deteriorated.
FPS:30
FPS:60
100.00%
80.00%
60.00%
1080P
ASR 2x(Quality)
Others
Looking at this power consumption analysis, the power consumption has also improved.

Arm ASR is truly amazing!
If you want to know more details about Arm ASR, you can check it out on Arm's official website!
https://arm.com/asr
HA HA HA HA

Oh dear, there was no chance to make an appearance this time...

# arm
## Accuracy Super Resolution

In the high-stakes world of gaming, every frame counts. When dropping frame rates threaten to ruin the ultimate gameplay experience, Dr. Arm and his talking assistant Mori, the flying squirrel, steps in to save the game. Faced with performance bottlenecks and blurry images, they turn to their revolutionary secret weapon: Arm Accuracy Super Resolution. This cutting-edge technology reduces computational load and memory bandwidth requirements while preserving nearly original image quality—all with seamless game engine plug-ins.