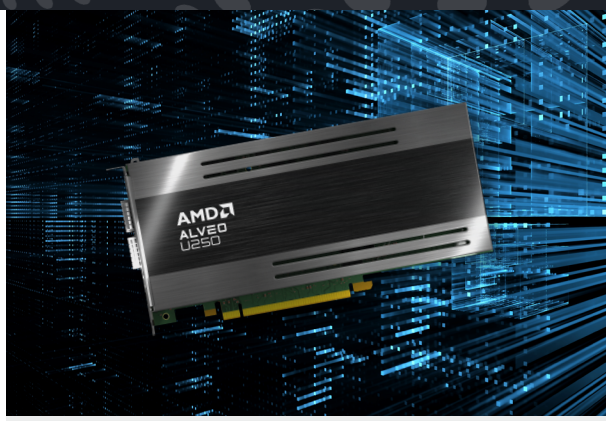
DEEPFIELD-SR–DEEP LEARNING BASED VIDEO SUPER RESOLUTION ACCELERATOR

INTRODUCTION

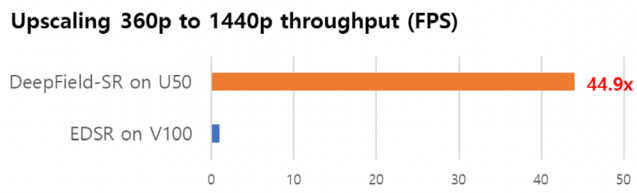
DeepField-SR is a fixed functional hardware accelerator leveraging AMD Alveo Cards to offer the highest computational efficiency for Video Super Resolution. Based on proprietary Neural Network trained with real world video data from the internet and fusing spatio temporal information in multiple frames, it produces superior high resolution video quality.



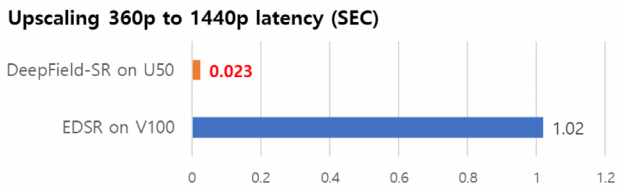
BENEFITS

Comparing with EDSR(NTIRE 2017) on Tesla V100

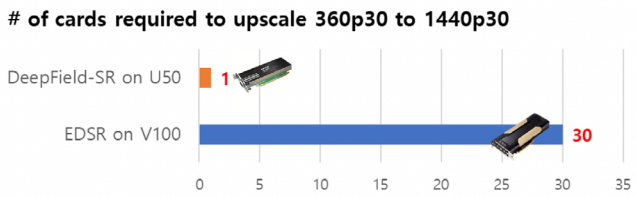
- 45x faster than GPU



- 0.03 better quality assessment in LPIPS metric than EDSR
- 44x lower latency than GPU



- 1x FPGA card required

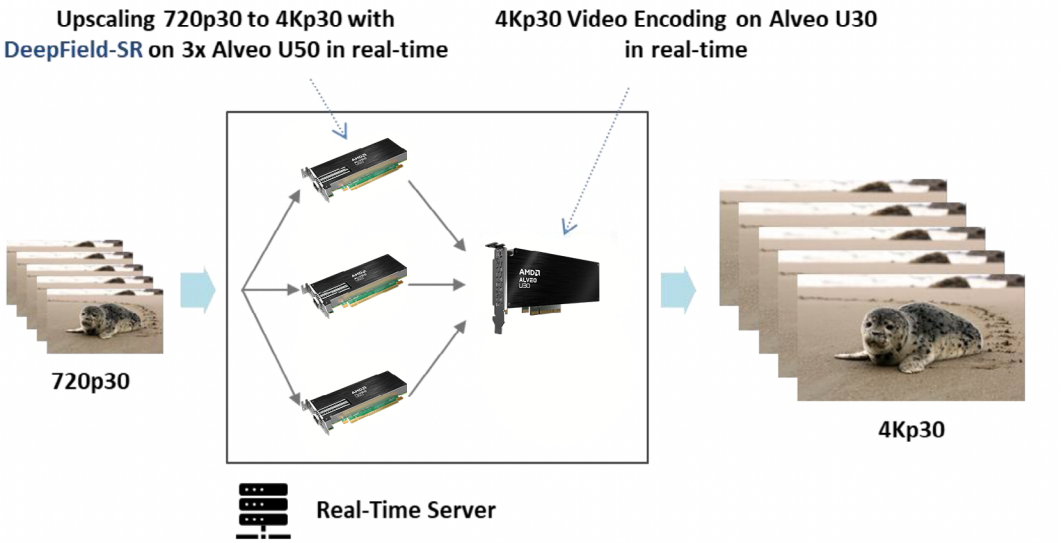


KEY FEATURES

- A fixed functional hardware accelerator offering high throughput
- Scalable architecture to support multiple FPGA cards
- Low upscaling latency
- Deep Neural Network suitable for resource limited FPGA
- Deep Neural Network trained with real world video data
- Designed with High Level Synthesis
- Easy to update and upgrade per market demands

SOLUTION OVERVIEW

DeepField-SR is deployable on both public cloud and on premise with AMD Alveo U200/U50 Accelerator Cards. As it is designed in scalable architecture and supports multiple FPGA cards, it can flexibly respond to various resolution upscale request. Its runtime performance on single Alveo U50 is 11 ~ 14fps to upscale video up to 4K resolution. The API is integrated within an FFmpeg workflow, meaning that simple command enables DeepField SR acceleration and upscaling user input video.



NEXT STEPS

- Learn more about BLUEDOT Inc.
- For DeepField SR quality evaluation, please visit http://kokoon.cloud
- Reach out to BLUEDOT sales at sales@blue-dot.io