

Yannick Strumpler, 2020-07-09, 2:00pm, Zoom



From Paudel <paudel@vision.ee.ethz.ch>
To Biwi <biwi@vision.ee.ethz.ch>, <biwi-students@vision.ee.ethz.ch>
Date 09.07.2020 08:27

Dear colleagues,
It is my pleasure to announce that we have a talk scheduled in our
CVL-seminar series.

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Yannick Strumpler
Semester work
Supervisors: Ren Yang, Dr. Radu Timofte

DATE: 2020-07-09
TIME: 14:00
Join Zoom Meeting
<https://ethz.zoom.us/j/96454884563>

TITLE: Learned JPEG Compression

ABSTRACT:

In this work we propose a new architecture aimed at improving the encoding of JPEG compression. JPEG is known to heavily degrade image quality at low bit per pixel rates. One of its limitations is that there are only two quantization tables which are used to quantize the whole image. Typically, the quantization tables are extrapolated linearly based on default quantization tables and a user specified quality factor. Based on a differentiable implementation of JPEG we propose an architecture that allows the optimization of the quantization tables at low bit per pixel rates through gradient descent. Additionally, we employ an attention network. We train our architecture using fidelity and perceptual losses and a new proxy for entropy. We have shown that our solution outperforms the standard JPEG implementation for strong compression in fidelity and perceptual quality terms. Visually analyzing the compressed images shows that our solution retains much better overall color while only slightly sacrificing details.

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You are all most welcome to attend!

Best,

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Danda Pani Paudel