Yannick Struempler, 2021-11-29, 2pm, Zoom

From Danda Pani Paudel <paudel@vision.ee.ethz.ch>
To <biwi@vision.ee.ethz.ch>, <biwi-students@vision.ee.ethz.ch>
Date 23.11.2021 12:05

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

==========

Yannick Struempler
Master Thesis
Supervisors: Janis Postels, Ren Yang, Luc Van Gool

DATE: 2021-11-29
TIME: 14:00
Zoom: https://ethz.zoom.us/j/61623790138

TITLE: Implicit Neural Representations for Source Compression

---

ABSTRACT:
Implicit Neural Representations have been shown to be a good representation for various data types. So far the focus has primarily been on optimizing the absolute performance of such networks. We investigate a new direction, that optimizes such a representation in a source compression setting under the fundamental rate-distortion trade-off. To this end, we use a SIREN network with an input encoding, overfit this to a single data sample and quantize the weights after training. To further improve rate-distortion performance, we employ regularization during overfitting and supplement the quantization step with adaptive rounding and quantization aware retraining. On top of that we leverage meta-learned initialization to provide a more efficient encoding, especially if the distribution of the data is known apriori. We evaluate our method in an image compression setting and show that our compression method is competitive with common compression algorithms designed specifically for the images. Moreover, this method provides the advantage that it can be adapted to data types for which there are no storage efficient algorithms so far.
==========

You are all most welcome to attend!

Best,
Danda