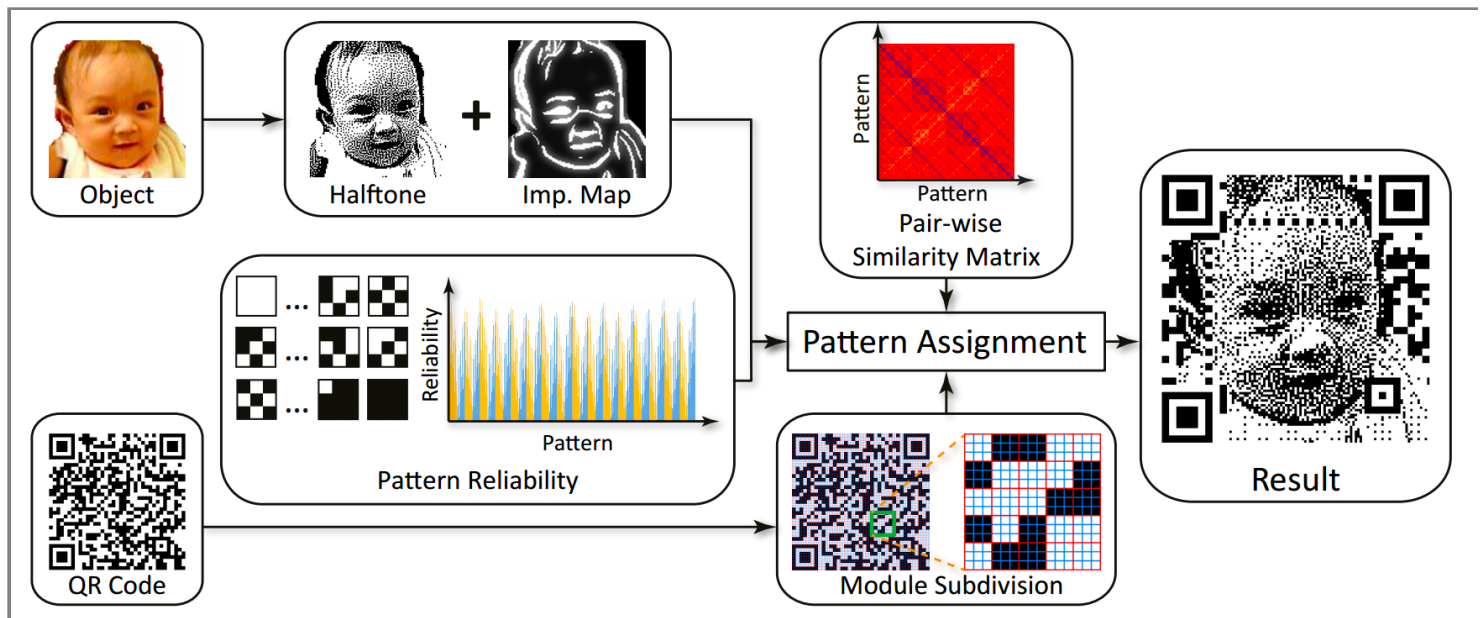# HALFTONE QR CODES

Hung-Kuo Chu, Chia-Sheng Chang, **Ruen-Rone Lee**, **Niloy J. Mitra**
**ACM SIGGRAPH ASIA 2013**

Abstract:

QR code is a popular form of barcode pattern that is ubiquitously used to tag information to products or for linking advertisements. While, on one hand, it is essential to keep the patterns machine readable; on the other hand, even small changes to the patterns can easily render them unreadable. Hence, in absence of any computational support, such QR codes appear as random collections of black/white modules, and are often visually unpleasant. We propose an approach to produce high quality visual QR codes, which we call halftone QR codes, that are still machine-readable. First, we build a pattern readability function wherein we learn a probability distribution of what modules can be replaced by which other modules. Then, given a text tag, we express the input image in terms of the learned dictionary to encode the source text. We demonstrate that our approach produces high quality results on a range of inputs and under different distortion effects.

System Pipeline:

Results:
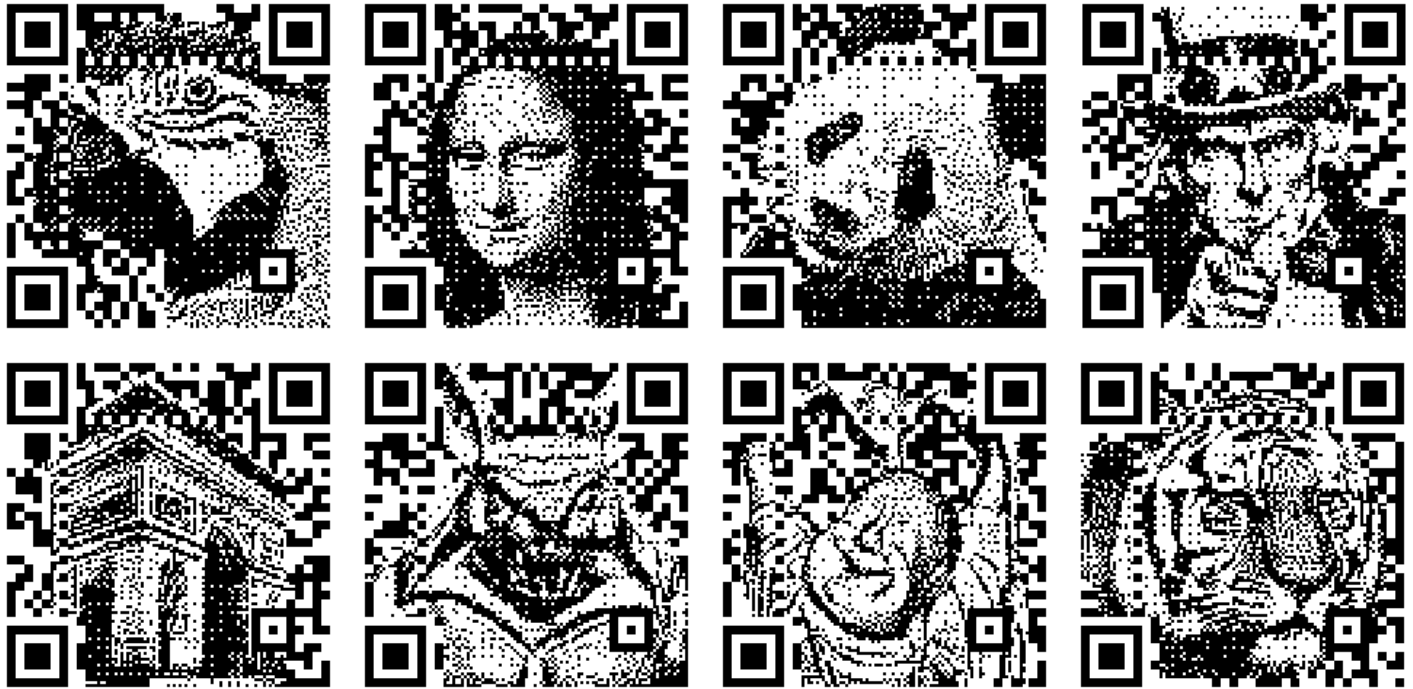
Video:

Bibtex:

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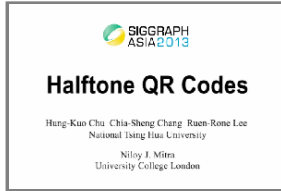
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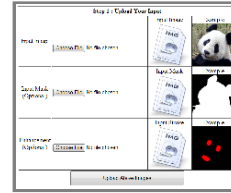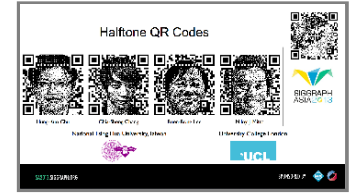

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(4MB)

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67MB)

Online Generator

Slides (24MB)