

# Treecodes: Shape-Free and Stylizable Scannable Visual Codes

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## Abstract

*In this paper, we introduce Treecodes, a new type of scannable visual codes. Treecodes extend the functionalities of traditional visual codes (e.g., QR-Codes) by allowing an unprecedented degree of customisation, both of the shape of the code and on its style, bridging the world of designers with the needs of machine-readable visual codes. The principle behind Treecode's visual encoding makes them the first visual code to be independent from their shape (i.e., not limited to a square, rectangle, or circle). Thanks to this property, they can be placed within any region (provided it is large enough to contain the message). In this paper, we introduce Treecodes and illustrate their novel bit encoding. Next, we propose an algorithm to efficiently generate a Treecode given a fitting shape and a message, and show how the message can be decoded. Finally, we compare Treecodes with other scannable visual codes in terms of space efficiency.*

## Introduction

We introduce a new thingy.