

ABSTRACT

Graphic designers create logos or artworks by using various tools such as Adobe Illustrator, InDesign etc. Many times, designers face a major problem where they want to change the visual appearance of the text to fit the design in the current context or to make the design look better, but text editing options provided today are very limiting to the user’s creativity. The designers get around this by converting text to outlines and then modifying each glyph like a separate graphic. This leads to text no longer being live (essentially unlinked) and the edits for each glyph can be time consuming.

The poster presents methods for modifying glyph’s horizontal and vertical weight. Later, the poster aims to provide the application of such modification to generate multiple styles by modifying glyph’s overall Weight, Width, CapHeight, xHeight, height of Ascender and Descender etc.

BACKGROUND

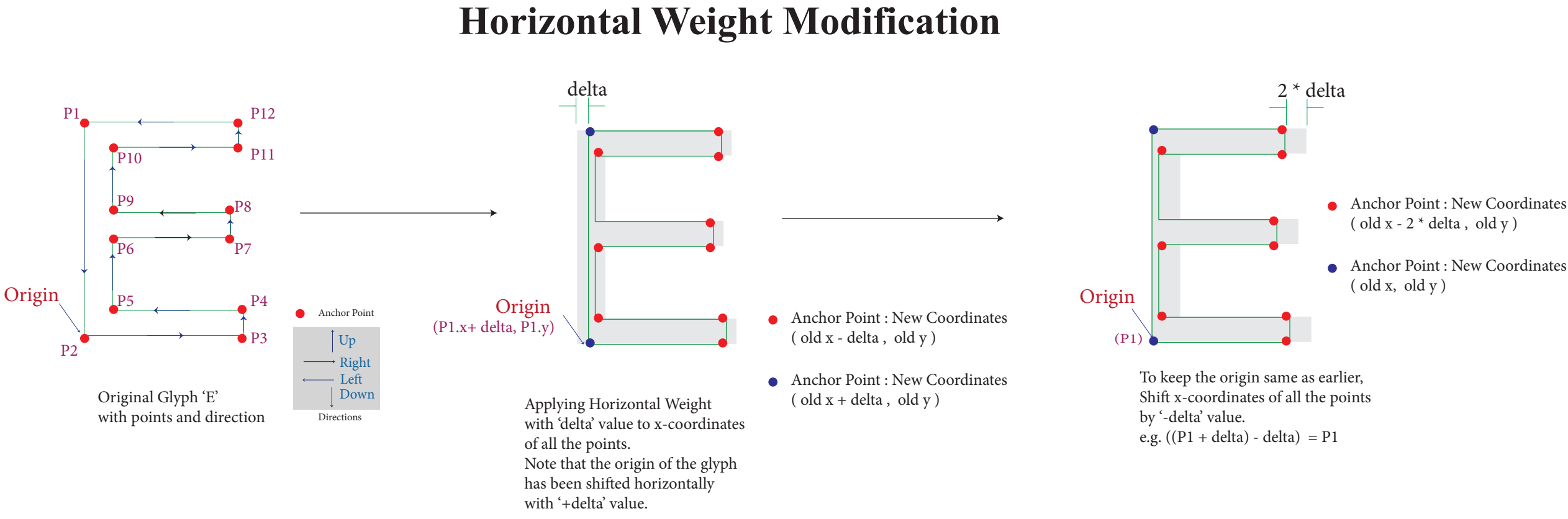
A glyph’s outline can be represented as Bezier paths containing various lines and curves segments. Most of the previous works done on modifying glyph outline are based on already stored information within the outline data. Multiple Master technology, to generate a semi-bold style, at least two styles e.g. ‘Regular’ and ‘Bold’ are required. Other techniques involve the scaling of the glyph and then modifying the glyph outline manually to adjust the stroke weight.



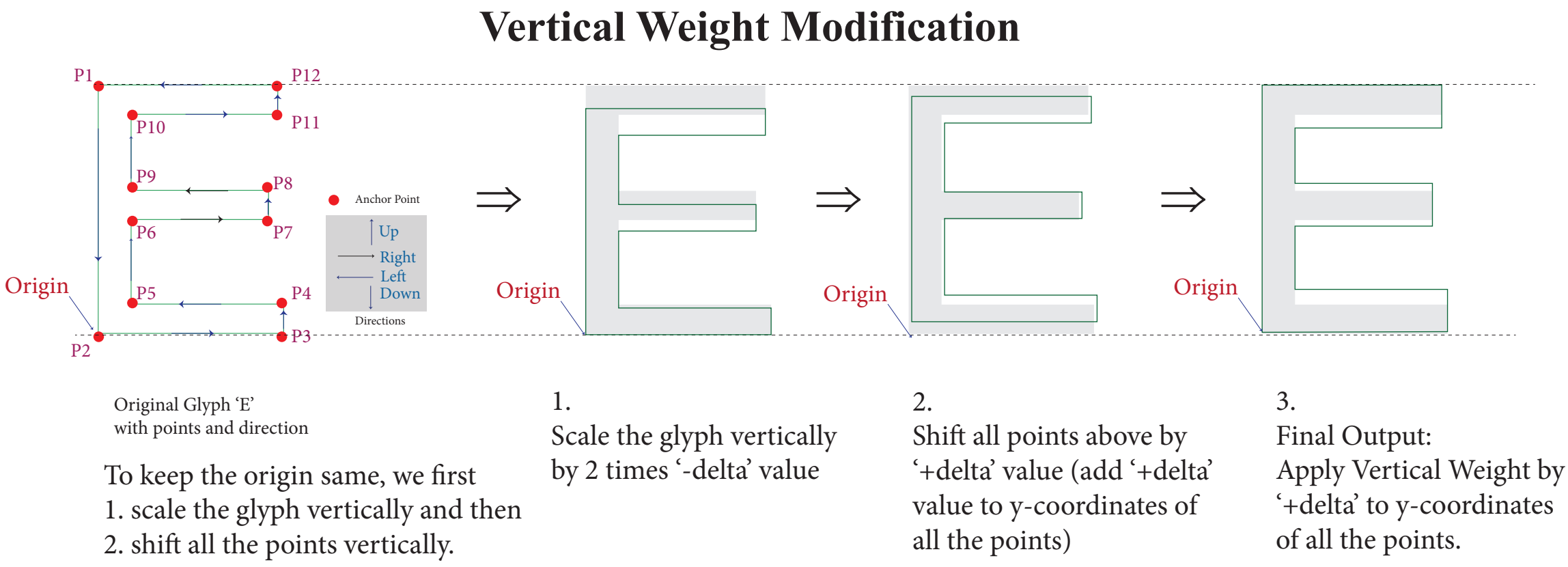
If the glyphs are scaled, then stroke weight also changes accordingly which leads to glyph distortion and unacceptable alterations.

METHODOLOGY

To modify the Horizontal Weight of a glyph, the x-coordinates of all the points are modified with a ‘delta’ value as per the direction of each line or curve segment as shown below. The ‘delta’ value will be subtracted from x-coordinates of points of segments which are in Upward (Up, LeftUp, RightUp) direction and ‘delta’ will be added to points of segments which are in Downward (Down, LeftDown, RightDown) direction.



To modify the Vertical Weight of a glyph, the y-coordinates of points are modified based on the direction as shown below. If direction of a segment is in Left direction (Left, LeftUp, LeftDown) then y-coordinate of the segment is modified by subtracting the ‘delta’ value else if the direction is in Right (Right, RightUp, RightDown) then the y-coordinate is modified by adding the ‘delta’ value.



APPLICATIONS

Overall Weight Modification

Overall weight modification using both Horizontal and Vertical weight modification.



Width Modification

Scale the glyph horizontally and then apply the Horizontal Weight to compensate the loss in stroke weight.



CapHeight Modification

Scale the glyph vertically and then apply the Vertical Weight to compensate the loss in stroke weight



xHeight Modification

Vertically scale the glyph-points which lie in-between xHeight line and baseline and then apply the 'Vertical Weight' to compensate the loss in stroke weight.



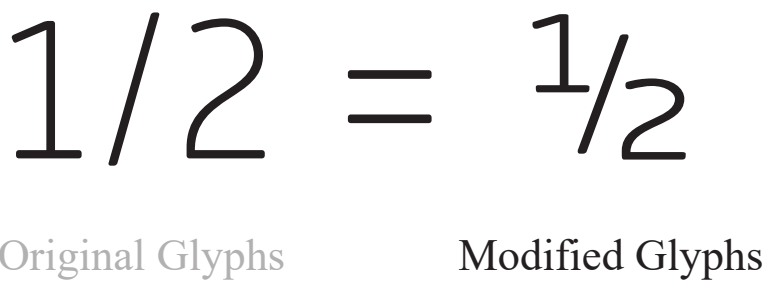
Ascent, Descent Modification

Using the same modification technique as done in x-height , ascent and descent can also be modified.



Composite Glyph

Generation of composite glyph by adjusting width and height of two or more glyphs while keeping the same stroke weight of glyphs



Variable Style Variants Generation



More Complex Example

