

3rd Global Summit and Expo on

MULTIMEDIA & ARTIFICIAL INTELLIGENCE

July 20-21, 2017 | Lisbon, Portugal

PANOSE-A: Encoding Arabic fonts based on design characteristics

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In digital world, there are thousands of digital fonts. So, selecting an appropriate font is not an intuitive issue. Designers can search for a font like any other file using general information such as name and file format. But for document design purposes, the design features or visual characteristics of fonts are more meaningful for designers than font file information. Therefore, representing fonts' design features by searchable and comparable data would facilitate searching and selecting a desirable font. One solution is to represent a font's design features by a code composed of several digits. This solution has been implemented as a computerized system called PANOSE-1 for Latin script fonts. It is used within several font management tools as an option for ordering and searching fonts based on their design features. It is also used in font replacement processes when an application or an operating system detects a missing font in an immigrant document or website. This research defined a new model, PANOSE-A, to extend PANOSE-1 coverage to support Arabic characters. The model defines eight digits in addition to the first digit of PANOSE-1 which indicates the font script and family type. Each digit takes value between 0-15 where each value indicates a specific variation of its represented feature. Two digits of the models describe the common variations of the weight and contrast features, which are two essential features in any font design. Another four digits describe the shape of some strokes that usually vary in their design between fonts, such as the end shape of terminal strokes, the shape of the bowl stroke, the shape of curved stroke and the shape of rounded strokes with enclosed counter. The last two digits describe the characteristics of two important vertical references of the Arabic font design which are tooth and loop heights.

Biography

Jehan Janbi is an Assistance Professor in Computer Science and Information Technology at Taif University. She completed her Bachelor degree in Computer Science at King Abdul-Aziz University, Jeddah, Saudi Arabia. She started her academic career as TA Lab Supervisor and Research Assistant in Computer Science department at Qassim University. She upgraded her academic level and completed her Master degree and PhD at Concordia University, Montreal, Canada. Her research interest includes "Text and font recognition, mainly for Arabic script". She worked on encoding Arabic digital font's design characteristics into a number composed of several digits where each digit represents specific design characteristics.

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