Some Recent Development in Shape Grammar Implementations

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Here are some recent development in shape grammar implementations:

DV-WET and DV-NET http://design.open.ac.uk/DV/
These were developed for Windows and use identity rules to restructure shapes according to user's intention. WET (With Eye Tracking) builds on the Tobii SDK for a Tobii eyetracker and recognises how to restructure shapes based on visual fixation; NET (No Eye Tracking) does the same job but with manual input. The two versions are free to download from the project website (click the menu item on the left) and there is also a bunch of documentation (user guides, tutorials and videos). Here is a paper from ICED2011 that gives an overview of the project and how the software works.

SGI http://sourceforge.net/projects/sginterpreter/
This was part of Tomas Trescak's PhD work. It's an updated and improved version of Ramesh Krishnamurti's work from the 80's, but with nicer interface, and improved matching algorithms. This is written in Java so should be platform independent. There's video tutorials on Tomas' website http://www2.iiia.csic.es/~ttrescak/sgi.html; and the software and algorithms are described in this paper http://dx.doi.org/10.1016/j.cad.2012.02.009

Subshape Detector and SD2 http://www.engineering.leeds.ac.uk/dssg/downloads/requestForm.php
These were developed to explore a computer vision method of object recognition applied to subshape detection, so use bitmaps as shapes and support grammars defined according to these. Subshape Detector is only a demo of the method and was developed for Windows. SD2 is a more complete interpreter and was developed in Java so is platform independent – it works ok, but there are bugs to be fixed when more complicated transformations are considered. A bunch of documentation is included in the download files. SD2 is described in this paper http://dx.doi.org/10.1007/s00163-010-0088-z

Another interesting project was Spapper http://sourceforge.net/projects/spapper/ which was part of Frank Hoisl's PhD research. It builds on a CAD kernel to implement 3D set grammars, but there's no subshape detection.

A shape grammar implementation workshop was hosted at Design Computing and Cognition 2010. The workshop report includes ppt slides which describe some of these and other implementations, and some thoughts from Scott Chase about the development of the field over the last 35 years. http://www2.mech-eng.leeds.ac.uk/users/men6am/DCC10-SG-Implementation-Workshop.htm