Subject: Principal Curves in IDL
Posted by struangray on Thu, 08 Mar 2007 12:34:40 GMT
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I have a problem similar to Thomas Launey's: I want to fit a smooth curve to a set of points scattered in x and y. I can't use simple smoothing or polynomial fitting because although the sets of points are grouped along curved lines in the x-y plane, the curved lines can in principle lie along any direction, and so the same curve can have the same x value twice.

Searches online have turned up the idea of 'Principal Curves': an algorithmic way to do what the eye does easily: draw a line through a set of scattered points. There's a fair bit of info here:

http://www.iro.umontreal.ca/~kegl/research/pcurves/

My question is: has anyone implemented something like this in IDL? It's the same problem as finding watersheds and riverbeds in terrain, so I suppose some of the geographers might have done similar work. The IDL manual describes using CONTOUR to find objects and extract paths that follow them, but for various reasons this is not a promising avenue for my current needs.

Ideas?

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