
Subject: Calculate convex hull of scattered data?

Posted by [art.croucher](#) on Mon, 13 Mar 1995 17:26:48 GMT

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I'm trying to calculate the convex hull which encloses a scattered data set. The JHU/APL CONVEXHULL routine didn't work, presumably because the data set isn't a polygon. Does anyone have a routine that will calculate either a convex hull or a polygon suitable for input to CONVEXHULL?

Thanks,

Art Croucher JHU/APL

art.croucher@jhuapl.edu

Subject: Re: Calculate convex hull of scattered data?

Posted by [sterner](#) on Fri, 17 Mar 1995 18:10:46 GMT

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art.croucher@jhuapl.edu writes:

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I posted a solution to this but just recieved email from David Stern with a much simpler and faster solution. Here it is:

I saw your messages RE convex hulls on the newsgroup. The TRIANGULATE procedure returns the indices of the points on the convex hull as an optional parameter. It is efficient, $O(n \log(n))$, and simple. Here's an example:

```
n = 1000                ;Make some random data
x = randomn(seed, n)
y = randomn(seed, n)

triangulate, x, y, tr, b    ;b contains the vertices on the hull
plot, x, y, psym=1
b = [b, b(0)]              ;Close the polygon
plots, x(b), y(b)          ;Plot the convex hull
end
```

Hope this helps...

David

I tried 10000 points and it only took a few seconds (unlike my convexhull routine which takes a few minutes for that number of points).

Ray Sterner sterner@tesla.jhuapl.edu
The Johns Hopkins University North latitude 39.16 degrees.
Applied Physics Laboratory West longitude 76.90 degrees.
Laurel, MD 20723-6099
WWW Home page: <ftp://fermi.jhuapl.edu/www/s1r/people/res/res.html>
