Subject: Today's IDL Lesson
Posted by David Fanning on Thu, 14 Aug 2008 19:05:13 GMT
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Folks,

A couple of weeks ago I was give some IDL code to, essentially, find blobs in a large image, do some processing on them, and return a result image. The images we want to work on are on the order of 8800 by 6800, pretty big.

Naturally, the code contained FOR loops coming out the wazzoo and it was VERY slow. I don't know *how* slow because I turned the computer off when I noticed smoke coming out the back and I couldn't immediately locate the damn fire extinguisher.

Because lousy code doesn't necessarily prevent you from writing scientific papers about your algorithm, I read the paper to get the gist and decided their algorithm was overly complicated and that I could do it a lot more simply (and in WAY fewer loops).

So I code it up, using a much smaller image subset, and it was quicker than snot. When I thought I had all the kinks worked out of it, I decided to give'er a try on the larger images. It took about 48 minutes to run. Humm. Odd.

But I couldn't immediately see where the problem was. I decided to play tennis instead of work on it anymore. :-)

This morning I ran the PROFILER on the code, and saw it was spending most of its time in the WHERE function. I was using the WHERE to locate the indices of blobs I wanted to work with from the LABEL_REGION image. A couple of quick tests showed that as that as that image gets larger, the search time of WHERE goes up exponentially.

"Humm, I wish LABEL_REGION just returned the indices like the HISTOGRAM function does," I thought.

What!? After 20 years of working with IDL it finally sunk in. What I need is a HISTOGRAM!!!!

Here is the bottom line. My program, which took 48 minutes to run yesterday, takes 10 *seconds* to run today.

Sometimes you just gotta love IDL! :-)

Cheers,

David
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Coyote's Guide to IDL Programming (www.dfanning.com)
Sepore ma de ni thui. ("Perhaps thou speakest truth.")
