
Subject: Re: Relative strengths: IDL vs. PV-Wave ?
Posted by [Robert Jansen](#) on Mon, 02 Dec 1996 08:00:00 GMT
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Martin Szummer wrote:

>
> Dear All,
>
> I am planning to acquire IDL or PV-Wave, and I was looking for
> information about their respective strenghts. The FAQ avoids
> this issue, so I was hoping you could enlighten me, while
> being fair to both parties.
>
> The following things are very important in my work:
> . image and video processing
> . machine learning and neural nets
> . rich programming language (batch processing)
> . linking with C/C++ code (under Windows NT, but also perhaps Linux)
> . speed (including speed of the IDL language)
> . many active users
> How do the products compare in the above regards?
>
> What product has the largest active user community?
>
> From IDL and PV-Wave's Web pages, I get the impression that
> PV-Wave sells more different commercial components/toolboxes
> (signal processing, beta image processing)
>
> What are your thoughts?
>
> Thank you,
> Martin Szummer

IDL is better. It has better color handling, more complete algorithms, better memory management, faster algorithms. This is coming from someone who uses PV-Wave (Since it's what is on most of the machines I use). For example the image rotation routines in IDL allow for bicubic-spline interpolation which is not in PV-Wave. They have also provided a general interpolation routine "interpolate" which should be a part of any image analysis package but is not in PV-Wave. They also have 24bit color graphics. What PV-Wave has done is to write a ton of silly little utilities which could easily be written by a beginner user. For example they have a function called avg.pro which takes the average of an array. It is nothing more than total(a)/n_elements(a). There are a million other examples. These tend to reduce the usefulness of the language as far as I'm concerned since they use up names and clutter up the language.

However, you may have to consider costs. I think IDL may be more expensive.

You of course should look at MATLAB also which may beat out both of these due to the ease with which it connects with C/C++

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Pass  Set  Spike
```

Subject: Re: Relative strengths: IDL vs. PV-Wave ?
Posted by [mcook](#) on Mon, 02 Dec 1996 08:00:00 GMT
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Martin,

I can't answer all of your questions, but I can relate my own experiences for you to consider. First of all we have site licenses for PV-Wave on many of our computers here, so it is more widespread than IDL. I use IDL on a couple of projects primarily because I want to use their ENVI package for spectral remote sensing which is based on IDL. I have used both IDL and PV-Wave for my own uses however, and here are some of my observations:

- * There isn't much difference as far as coding goes for the most part. For some reason, IDL seems to run faster for me, but that may be my particular applications. Don't use me as a benchmark.
- * The main differences come from when the two products split from the common source and additions were made: GUI and numerical/stat routines. Review the two offerings yourself to compare their relative merits.
- * I'm not crazy about the GUI for either. If I have to make a GUI now, I will use a TCL/TK driver with PV-Wave as an engine (I haven't tried it with IDL, simply because I've never had to). This opinion is primarily because I don't

like messing with the intricacies of low-level widgets and the like. Also they seem much less flexible than I like.

- * Some of my work involves using polygon graphics. PV-Wave has quite a few useful routines for polygon manipulation (both will render polygons) already included that really help here. It is easy to write your own routines to mimic the PV-Wave routines in IDL however.
- * The only bug I've noticed between the two was a consistently incorrect rendering from PV-Wave of a 3-D surface with shading. IDL produced the correct rendering with essentially the same code and was much faster about it.
- * I've only done a little interfacing to other languages, with IDL, but didn't have much problem. Again, it was only minor routines.
- * I haven't noticed any difference for the image processing routines.
- * I would surmise that you want your own code for the machine learning or NN applications. I suspect your code would run on either about equally well.
- * I was told there may be OpenGL support in a future version of IDL, which is something particularly useful to me.
- * Even though PV-Wave is widespread here, I've noticed most engineers use MATLAB. I firmly believe however that is because they have little or no experience with PV-Wave. They don't realize the rich offerings Wave and IDL have for their work.

Hope this helps. I don't think you'll go wrong with either. If however you have need for a product like ENVI, I have found it very useful for my work and it isn't available for PV-Wave.

Regards,
Mark Cook
mcook@ti.com

Dr. Mark K. Cook, MGTS
Systems Group

Subject: Re: Relative strengths: IDL vs. PV-Wave ?
Posted by [Martin Szummer](#) on Tue, 03 Dec 1996 08:00:00 GMT
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Dear All,

I did some searches using DejaNews and found previous comments regarding the merits of IDL and PV-Wave. I have taken the liberty to abbreviate the replies; the context may be missing, my apologies. Use DejaNews to retrieve the original posts. The query string was:
IDL & PV-Wave & (compar* | differen* | better | best | review*)

Also I do not know how up to date the information is with respect to the latest versions, but I have included post dates.

If you think these facts and opinions are mistaken, please add yours!

--- Martin

grunes@news.nrl.navy.mil (Mitchell R Grunes)
sci.image.processing, comp.lang.apl posted 1996/09/24, 1996/08/15

IDL vs PV-Wave

- IDL handles more image file formats
- IDL handles 24 bit display, PV-Wave could not, at least in the past
- PV-Wave has smooth animation on SGI's, but IDL flickers
- IDL has better memory use
- IDL has better world maps
- IDL has possibly better documentation

Comparison IDL and Matlab
Source: http://www.amara.com/ftpstuff/IDL_Matlab.txt

IDL vs Matlab

Matlab

- + more compact syntax
- no explicit types
- + more beautiful graphics
- non-intuitive to customize graphics
- + more built-in functions than IDL
- + more toolkits
- difficult to batch-process a directory of files
- + better technical support than IDL

IDL

- + more of a true programming language: procedures, functions, explicit types
- + more file formats supported (HDF, CDF, easier to write new ones)
- + file I/O easier

William Clodius <wclodius@lanl.gov>

Date: 1996/09/23

Newsgroups: sci.image.processing

...

Both packages provide accesss to extensive numerical libraries, PV-Wave to those of IMSL (this may be an optional add-on), IDL to an enxensive subset of Numerical Recipes Routines. No knowledgeable person would argue that the Numerical Recipes routines are better than those of IMSL, but the wide availability of the Numerical Recipes text may make customization of those routines easier in IDL.

Newsgroups: sci.image.processing

From: medimtintl@aol.com (MedImTIntl)

Date: 1996/09/21

(...) Any "additional library" from the VNI is many times outweighed by the contributions in the User Library developed by hundreds of users around the world that continuously contribute and enrich the RSI offerings.

comp.lang.idl-pvwave

Subject: Re: Can I do this without using loops?

From: David Ritscher <david.ritscher@zibmt.uni-ulm.de>

Date: 1996/06/14

Message-Id: <31C17DE4.50C@zibmt.uni-ulm.de>

IDL. Version 3.1.0 and PV-WAVE v6.01. Sometimes one was faster, sometimes the other (often by a factor of two or more!).

	Insert columns		Insert rows	
	IDL	PV-Wave	IDL	PV-Wave
1.	22.84	17.58	30.48	21.31
2.	22.77	30.81	4.45	1.48
3.	3.88	9.73	3.87	9.70
4.	12.05	11.93	5.67	7.17
5.	89.24	164.56	87.51	163.15
6.	141.93	385.72	140.45	389.53
7.	92.75	166.44	92.82	169.71
8.	1.30	4.96	9.78	10.29

9. 30.75 28.71 18.40 21.60

Tested using the following number of rows and columns: 1000, 30000

	Insert columns		Insert rows	
	IDL	PV-Wave	IDL	PV-Wave
1.	84.95	71.09	Inf	Inf
2.	Inf	Inf	28.52	22.69
3.	27.65	42.95	30.88	50.10
4.	129.53	138.84	124.39	126.26
5.	300.62	547.51	296.74	556.55
6.	-	1284.83	-	1300.17
7.	Inf	Inf	Inf	Inf
8.	20.07	28.76	Inf	Inf
9.	-	3100.02	158.07	161.23

Newsgroups: comp.lang.idl-Pvwave
Date: 1996/06/15
Subject: Re: Can I do this without using loops?
From: David Ritscher <david.ritscher@zibmt.uni-ulm.de>

...
Ratios of execution times of rebin(/sample) / rebin():

problem with 3000, 3000 rows and columns:

	IDL	PV-Wave
test8	1.22997	0.676364
test8_rows	0.999363	0.956496

problem with 1000, 30000 rows and columns:

	IDL	PV-Wave
test8	1.06719	0.936516
