

CSE 462 – Assignment 2  
Professor David Abramson

Due Date – 3<sup>rd</sup> November 2006

In assignment 1 you were asked to explore a range of application areas and how these have been enabled by high performance computers.

In this assignment you are asked to choose *two* of the applications that you discussed in assignment 1. You should illustrate how you would solve the problem using each of the machine architectures listed below. You should discuss issues such as algorithm design, data mapping and decomposition, input-output, data storage and communication and processing requirements. For each application you should contrast the different architectures and describe which one you consider the more appropriate. You do not need to devote the same amount of space to each machine type, since some problems cannot be mapped to certain machines.

The best source of material is likely to be conference and journal proceedings, and the Web. Please be very careful about citing appropriate reference material and be careful not to simply cut and paste from electronic sources. You are encouraged to use diagrams where appropriate.

Your report should not exceed 8 A4 pages (excluding references) and should be prepared using the IEEE Computer Society Press format, which are available at [http://www.ieee.org/portal/cms\\_docs/pubs/confpubcenter/pdfs/samplems.pdf](http://www.ieee.org/portal/cms_docs/pubs/confpubcenter/pdfs/samplems.pdf)

You are to submit your assignment electronically in PDF format (or RTF if you cannot generate PDF) to [davida@csse.monash.edu.au](mailto:davida@csse.monash.edu.au), and the subject line should use the following text string “CSE 462 Assignment 2 Submission”. In the body of your e-mail you should include the following text:

*I, ....., declare that this submission is my own work and has not been copied from any other source without attribution. I acknowledge that severe penalties exist for any copying of material without attribution, including a mark of 0 for this assessment.*

### High Performance Architectures

- Vector Machines
- SIMD
- Shared Memory MIMD
- Distributed Memory MIMD