

C S S A CONFERENCE arranged by Rhodes University
in conjunction with the C S S A.

There will be a conference on Research Directions in Parallel Processing at Rhodes University, Grahamstown, on Monday, 16th November. The speakers are Professor G Joubert from the University of Natal, Professor U Schendel from The Free University, Mr A Maeder from the University of Natal, and Mr P Wentworth from the University of Port Elizabeth.

Details are available from Professor D Riordan at the Computer Science Department of Rhodes University- phone (0461) 2023.

P R O G R A M M E U P D A T E

C S S A CONFERENCE ON PARALLEL PROCESSING

VENUE : RHODES THEATRE, ROOM 307, THIRD FLOOR.

TIME AND DATE: 9.30 AM MONDAY 16TH NOVEMBER

AIM: The aim of this conference is to give directions for meaningful research in this field. Many interesting problems (suitable topics for research these at the honours, masters and doctoral levels at the Universities) exist. There is also much scope for the commercial application of parallel processing. It is hoped that the speakers will cover both aspects.

9.00 Registration

9.30 Opening Address: D S Henderson

9.45-10.45 Introduction to parallel computing, an overview and classifications by Prof G Joubert, University of Natal.

10.45-11.45 Aspects of parallel algorithms: by Prof U Schendel, The Free University, West Berlin.

11.45-12-00 Coffee

12.00-12.45 An assynchronous programming language and computing machine: by Mr E P Wentworth, University of Port Elizabeth.

1.00 - 2.00 LUNCH

2.00 - 3.00 Construction of a simple parallel computer and a description of the results obtained:
by Mr A Maeder, University of Natal.

3.00 - 3.35 Concurrent Processing on the Intel-Multibus System.
A report on a research project by Chris Carey,
Pretoria University.

POINTS TO MENTION

The reduction in cost of integrated circuit technology has enabled many research institutions to do work in the field of computer design and application.

In the East Cape in particular both Rhodes University and UPE are involved in projects concerning the application of microcomputer technology. Both Rhodes and UPE are also involved with work in numerical analysis. A certain amount of research work is done in this field by Prof. Keith Greggor at UPE and both institutions have departments which use sophisticated numerical techniques in the course of their research.

The Department of Computer Science at Rhodes initiated this conference in the hope that workers in both these fields may find common ground and better understand how the research potential in the field of parallel computers can be exploited and applied in both areas.

All the members of staff in our department are interested in the subject.

It gives me great pleasure to have the opportunity to say a few words of welcome, esp to our speakers and visitors. Our speakers Profs Schendel and Joubert and Messrs Casey, Maeder and ~~Maeder~~^{Wentworth}, come from a variety of backgrounds and will cover an interesting spectrum of topics.

→ The whole question of efficient computation in Numerical, and the possible exploitation of \parallel processing for this purpose, has received a great deal of attention in last two decades. Various schools of thought, and challenges not only to designers of num algorithms but also to compiler writers and op sys designers to exploit the parallelism inherent in the algorithm possibilities and the multiple processors. What can be done has been very much influenced

Warm Welcome too to the contingent from OPE and reps of manufacturers Mr. Wenzel of IBM and Gershband of Burroughs.

A word of congratulation ~~too~~^{also} to the organisers RU Comp Sci for their initiative and efficiency.

16/11/81

by economics. The enormous reduction in lsi a
now vlsi has made some meaningful and practical
research possible even at small centres such as
OPE and Rhodes. At both centres there are groups
interested in pursuing ideas - hence the conference

Present technology favouring multiple processors
not always reflected in past. IBM in 60's & much
influenced by Amdahl - ~~is~~ unquestionably a single
instruction stream man. Did it like multiprogramming
on independent jobs. → Amdahl machines - pipelining
etc impressive strides but ultimate limitations

At other end of spectrum. Illinois machine, ILL
array processors now linking indep modules in arrays.
Herrendon's problems. - storage contention, synchronization
Coupling etc.

Obvious starting place - hand coded sp applications
where time is vital - PDEs of weather forecasting
is ~~other~~ paradigm example. Even here ~~progress~~ ^{progress} has
been less spectacular than orig anticipated. I myself
tend to be not very bullish about automatically
compilable // procs, but then neither was I about
optimising compilers - and some very impressive
strides made. However, I anticipate the conference
itself - and to let me hasten to declare this
CSSA Conf on // processing duly open
for business.

C S S A CONFERENCE ON PARALLEL PROCESSING TO BE HELD
IN ROOM 307 (SPEECH AND DRAMA) ON MONDAY 16TH NOVEMBER 1981 AT 9.30

THUMBNAIL SKETCHES OF SPEAKERS

PROFESSOR UDO SCHENDEL

is currently Professor of Numerical Mathematics at the Free University of West Berlin.

His main interests are numerical methods for sparse matrices and parallel computing.

He has recently published a book on parallel numerical algorithms.

He is at present a visitor at the University of Natal (Durban).

MR A MAEDER

Completed his B.Sc honours at the University of the Witwatersrand in 1979. During 1980 and 1981 has been involved in research as part of the parallel processing group project of the University of Natal where his chief concern has been the designing, construction and testing of a dual processor computer. He is currently concluding his M.Sc in the field of parallel computing.

MR P. WENTWORTH

completed his M.Sc at the University of Port Elizabeth in 1980. His field of research at the time was functional programming. During 1981 he has been involved with designing and implementing a Motorola 6800 based terminal cluster controller.

MR CHRIS CAREY

He is currently engaged in research towards an M.Sc degree at Pretoria University. The report he will be presenting is a departmental project. He obtained his B.Sc and Honours at Pretoria in 1977 and has been lecturing there ever since. He is a senior lecturer.

PROFESSOR JOUBERT

Completed his M.Sc at Stellenbosch University in Numerical Mathematics.
Got his PhD in Numerical Mathematics at Cape Town University in 1959.
After lecturing at Stellenbosch and Wits, he then joined the CSIR in 1962.
He became Professor of Computer Science at UNISA and Head of Department of Computer Science at the University of Natal in 1974.
He has spent extensive periods overseas doing research in Numerical Mathematics and Parallel Computing, as well as in digital image processing in medical research.
In 1979 he gave a series of lectures on Parallel Computing at the Technical University of West Berlin.

LIST OF DELEGATES

Prof. Joubert - Natal University
Prof. Schendel - Visiting from West Berlin Free University
Mr. A Maeder - Natal University
Chris Carey - Pretoria University
Mr P Wentworth - UPE
Prof G de Kock, Prof K Greggor, Mrs J Wesson, Prof P Warren
and Mr H Venter - all from UPE

Rhodes: Computer Science Dept:
Physics Department
Business Administration Dept.

I.B.M. Mr H Wessels
Burroughs : Mr U. Gerbhard