

# BIOCOMPUTERS

Netsivi Ben-Amots

April 1993 (No. 4)

THE BEST ADVICE IS USELESS UNLESS YOU 1) READ IT 2) DO IT!

## CONTENTS

### NEW subjects

1. Zeev is back
2. Parallel computing – first step to supercomputer. Course starts on 25.3
3. New turbo computer in Technion
4. Last MAXC days. Migrate to biomed or VMSA.
5. Publish your biomedical computer simulation in wonderful Copenhagen
6. Are you interested in hearing lectures on useful computer software?
7. Advanced graphics in matlab4: Course starts on 29.4
8. Help in programming

### MODIFIED information on previous subjects:

9. tpu editor in biomed will be cancelled. Substitute: emacs tpu emulator
10. Do not press CTRL-Z in biomed
11. 5 graphic terminals in terminals room 361.
12. Quick short guides (e-mail, ftp, pico & vi) written by Netsivi
13. List of more guides available free from Zeev or to read in room 361
14. Computer Center sells software at low prices.
15. Antivirus
16. Xterminals:
  - a) Advices for matlab users
  - b) Close your Xsessions when not needed!
17. Printers:
  - Mainframe Computers:
    - a) Send graphs to graphs queue, otherwise YOU stall the printers
    - b) Send text to epson printer. Do not send long prints when busy
    - c) Save laserprinters for graphs. Do and do not in laserprinter
    - d) When the printer is stalled
    - e) MAXC/VMS users may hold/release/delete prints in queue
  - PC Computers:
    - f) Laserprinter
    - g) WordPerfect
    - h) Epson
18. Friendly pico editor in biomed/UNIX e-mail instead of awful vi editor
19. Powerful MAPLE software for ANALYTICAL SOLVING ON tx COMPUTER!
20. Quick reference guide for mathematica software on tx computer



1. Zeev Schneider is back on duty, helpful as always.
2. PARALLEL COMPUTING COURSE OPENS ON 25.3

In PARALLEL COMPUTERS many CPU's work in parallel on one job. This makes parallel computers very fast.

The Computer Science Department in the Technion has a parallel computer for research and teaching purposes, named DASI. DASI is not a supercomputer, yet each of its CPU's is much faster than our biomed computer. DASI is a UNIX computer, and experience in biomed or tx computers is highly recommended. Four users in the Biomedical Engineering Department have already studied in the previous parallel computing course. Three more intend to learn in the next course, starting on 25.3.93. Heavy users who want to use the parallel computers for large detailed biomedical models, and those who like computer challenges, phone Aythan Avior (4352) for joining the course (and E-mail aythan@cs).

3. The Technion has a new UNIX computer, named turbo. It is supposed to be faster than the Convex, but it is not a parallel computer. It has matlab4. Fifteen users of Biomedical Engineering Department have experience in biomed, sufficient to work with turbo. Almost all of them have already opened accounts in turbo and have run their programs on it. At present the turbo computer is very slow although very few of the other faculties use it. We hope the Computer Center will tune it to work faster at future, after we reported them. However, one may run many processes on this computer, if one process does not need the results of other processes. Use turbo if biomed limitations disturbs you.

Turbo has neither pico editor nor tpu editor. But it has the emacs editor. Ask Zeev for guides and how to use emacs as tpu emulator. Those who want to work with turbo computer, need to go to the Computer Center to open an account, with a letter from Netsivi or Zeev.

4. The Biomedical Engineering department cannot pay the thousands of dollars needed for service for MAXC computer. It will work until it fails, and than its future is unknown, probably closing. Those who use MAXC for mail and ftp should migrate to BIOMED. The E-mail and ftp in biomed is very similar to MAXC and there are shorts guides for E-mail and ftp in biomed, written by Netsivi, and available from Zeev. Remember to ask Netsivi to change your biomed E-mail so it will work with friendly pico editor, instead of the awful default vi editor, or ask Zeev how to do it alone.

Those who must work with VMS or PASCAL, should migrate to VMSA. Ask Zeev to open an account for the biomed, or VMSA, or both, and/or enlarge your disk quota if needed. Those who feel that they remain without a solution to their problems, contact Zeev. Do not wait until the sky falls on your head.

Steps needed before quitting MAXC: 1) run the heavy jobs on tx and turbo instead of the loaded biomed; 2) closing tpu editor on biomed (yet tpu is already available via emacs editor – details from Zeev). These steps will enable MAXC users, especially the Laserprinter, to migrate to biomed.



5. The *1<sup>st</sup> Symposium on Computer Simulation in Biology and Medicine* will be held in Copenhagen, Denmark, in 23–25/8/1993. This is an excellent symposium. Send two page abstract of biomedical computer simulation results, to arrive before 12/4/93; full paper arrive before 30/6/93; funding, hopefully via your "hishtalmut". This symposium appears to have been designed exactly for the research subjects in our department. Details of the symposium are on the bulletin board next to the Main Office. Scandinavia is famous for its wonderful scenery, but this is not our subject here...
6. Would you like to hear lectures of expert computer users on subjects like using maple and mathematica software, and on software that can predict heart attack months beforehand? This idea will be investigated only if there are enough positive answers to Netsivi. See also sections 19 & 20 herein.
7. ADVANCED GRAPHICS IN matlab4, for tx or turbo users: Course on 29.4 and 4.5. Phone Talma or Irit, 3333 or 3301.
8. Offer for help in programming (students), including PC, UNIX and C language, not including mathematics. Write (Hebrew) appropriate subjects and definitions what the computer program should do, and give Netsivi.
9. Those who must work with tpu editor, please use emacs as tpu emulator. You may use emacs with tpu emulator in biomed computer 24 hours a day. Details from Zeev. Old tpu will be canceled soon!
10. UNIX/biomed users: DO NOT PRESS CTRL-Z when in mail, ftp or tpu. It disturbs the system. Better NOT TO PRESS CTRL-Z at all, (unless for background job.)
11. The terminal room 361 now has: 5 graphic terminals, 3 of which are terminals with Xwindows. Use them with tx, VMSA, biomed and turbo software.
12. QUICK SHORT GUIDES written by Netsivi for:
  - a) e-mail via UNIX/biomed, including both vi and (pico editors
  - b) ftp (File Transfer Protocol between computers, including binary files, and both PC's and mainframes, here and abroad).
  - c) pico – friendly editor on biomed and tx
  - d) vi – UNIX standard editor on biomed or tx, turbo and other UNIX computers

These are available from Zeev, or can be read in the terminals room 361.



## 13. GUIDES AVAILABLE:

Subject	Read in Room 361	Free from Zeev	Borrow from Zeev
Biocomputers = this publication	+	+	
<b>UNIX-biomed or tx</b>			
biomed – list of software	+	+	
biomed – list of commands	+	+	
Compilers in tx	+	+	
emacs editor (biomed, turbo)	+	+	+
E-mail (biomed)	+	+	
ftp (biomed)	+	+	
gnuplot (graphics in tx)		+	
gnuplot (graphics in VMSA)	Guide available in computer center		
latex (tx)	+	+	
macsyma (tx)	+		+
mathematica quick ref. (tx, turbo)	+		+
maple (tx)	+	+	
matlab (biomed, tx)	+	+	
matlab (turbo)	+	+	
matlab in VMSA	Guides available in computer center		
matlab primer	+		+
matlab4 (tx)	+	+	
matlab – ver. 4 vs. ver. 3	+		+
pico editor (biomed, tx)	+	+	
Tex (tx & PC)	+		+
Software in biomed	+	+	
Software in turbo	+	+	
Software in tx	+	+	
Software in VMSA	+		+
Tex (tx & PC)	+		+
tx – list of UNIX commands	+	+	
tx – list of compilers	+	+	
tx – list of software	+	+	
turbo – list of software	+	+	



Subject	Read in Room 361	Free from Zeev	Borrow from Zeev
UNIX commands in biomed	+	+	
UNIX commands in tx	+	+	
UNIX (in CONVEX – similar)	+	Sold in Computer Center: 20 Shekels	
UNIX basic guide	+	+	
UNIX/VMS getting started	+		+
vi editor (biomed, tx)	+	+	
VMSA – list of software	+	+	+
xv (graphics in tx & biomed)	+		+
<b>Other Mainframe Manuals upon Request from Zeev:</b>			
Short manuals (tx, turbo, VMSA)		+	
Long tx manuals:			+
<b>PC Word Processors and Software</b>			
DOS 5 vs. DOS 3.3	+		+
Einstein (Hebrew)	Hebrew book sold in shops – 40 Shekels		+
Oren (Hebrew)			+
Tex (PC & tx) (English)	+	+	
Windows 3.0 (no Heb) (English)			+
Windows 3.0 (no Heb) (Hebrew)			+
WordPerfect	English guide may be borrowed from Debbie		Hebrew
WordPerfect short guide: in preparation.	Available Soon ☺		
List of PC software sold at low prices by the Computer Center:	+	+	

14. The Computer Center sells software at low prices. Contact Ben Pashkoff (2177). See list in room 361. Remember – it is not the duty of anyone to give you copyrighted/protected software free.

15. Antivirus

Ask Zeev for the new version 102 of McAfee (scan) antivirus. First priority to computers that are already attacked by viruses. Second priority to labs. Third priority to single users. Last priority to those who already have version 99 or 100. Automatic antivirus (vshield) enables to immediately find the diskette with virus, but needs 40K resident memory. Be aware of possible problems, and if necessary, ask Zeev to cancel the automatic operation of the antivirus. Do not



bring children computer games to the Technion. Ask Zeev for equivalent scan antivirus program, to take home and check the games there. MS-windows users – note it to Zeev. There is a special version for MS-windows.

16. Xterminals

- a) matlab users of mainframe computers with Xterminals: If you call matlab:  
matlab -fg black -rv  
you will get on the screen graphs with good contrast.  
IF YOU GET AN ANSWER OF LICENSE PROBLEM, CLOSE THE SESSION AND OPEN A NEW SESSION, AND TRY matlab AGAIN.
- b) Mainframe users: when finish, close:  
maxc (=VMS): logout and close windows.  
biomed (UNIX): exit or logout, and close windows.  
vmsa, tx, discus, and (telnet maxc): logout all the chain of computers, and close your windows. Reason: the number of allowed processes is limited in all the computers, and others want to work when you do not need the computer.

17. Printers

Printers of mainframe computers:

- a) BE CAREFUL! SEND GRAPHS TO THE PS QUEUE, AND TEXT TO THE ASCII QUEUE. ADAPT GRAPHS SHOULD BE SENT TO TK QUEUE WITH TPRINT. GRAPHS SENT TO ASCII QUEUE STALLS THE PRINTERS. When this happens, the system frees the printers automatically and periodically, once every hour at 1:30, 2:30, etc. Patience please.
- b) Send mail, sources, data, results to Epson printer only. From Biomed use zprint with option 1. Many users send printouts of thousands blocks to the laserprinter at busy hours, and cause delays to all other innocent users. Be reasonable.
- c) Laserprinter: Save it for graphs, word processor prints (Tex), final prints, and for prints that are used many times (guides). DO NOT PUT IN USED PAPER. DO NOT OPEN THE PRINTER. Put paper properly in cartridge. Put cartridge properly in printer. Do not send graphs to ASCII queue. Do not use the laserprinter for long not final texts. After sending necessary prints of many pages, stand near the Laserprinter, to keep pages in order. Add paper, otherwise you cause a long queue of prints.
- d) When the printer is stalled, or when the queue is too long, one may transfer files to PC via ftp, and print with the Canon laserprinter. Diskette and counter are needed. The system wakes the printer once every hour if necessary, at 1:30, 2:30, etc.



- e) MAXC users: use pq command to check the queue to printer. If your entry is on hold, you can release it, keeping the following rules: write the entry number (2 or 3 digits).
  - I) Do not release if the printer is stalled.
  - II) Printouts longer then 200 blocks: Release when printer is idle.
  - III) Short printouts: Release when printer is either idle or busy.
  - IV) The command is: set entry number/release
  - V) Long printouts: hold with command: set entry number/hold
  - VI) Delete unnecessary prints with: delete/entry=number (or dq number)

PC printers in room 361:

- f) Laserprinter: Bring files on a diskette. The groups of Prof. Sideman and Rafi Beyar: ask for the Canon counters from Debbie. Ask Zeev for counter when Debbie is absent.
  - g) Regarding WordPerfect – Do not forget that F3 gives help on almost everything. Use that before asking questions. The first computer in room 361 has tutorial in English. Use it. During work hours the English manual is available from Debbie; the Hebrew manual is available from Zeev upon request.
  - h) Epson PC printer: Prints of ASCII files can be made with new epson program. Option 4 gives more dark prints.
18. Friendly editor for UNIX biomed computer.  
 Start: pico filename  
 quit or exit: CTRL-X                      check spell: CTRL-T  
 Bring file: CTRL-R                      and then: /u/username/path/filename  
 Ask Netsive to make e-mail in UNIX/biomed work with friendly pico editor, instead awful vi editor, or ask Zeev how to do it alone.
  19. Powerful software for 386/486, named MAPLE, costs 55\$ in Technion, exceeds Mathematica, Macsyma, Reduce, Mumath, etc. Includes symbolic algebra, can save time of SEARCHING in INTEGRALS TABLES, DERIVATIVES TABLES. Also SOLVES ANALYTICALLY algebraic equations and ordinary DIFFERENTIAL EQUATIONS! And much more. Uses artificial intelligence, seems science fiction, yet works fine and easily. maple, macsyma, and mathematica are available free in tx UNIX computer. REDUCE is available free in VMSA. Read description of maple in room 361, or get description free from Zeev. Contact Zeev (4138) or Ben Pashkoff (2177) to buy PC MAPLE.
  20. Mathematica software is powerful, convenient, available free in tx and turbo computers, and very popular in the Faculty of Physics. Mathematica quick guide is available now in room 361, or to be borrowed from Zeev.

