



The ACSS

Newsletter

University of Minnesota
Twin Cities
February 1986

Special Projects

Artificial Intelligence Tools and Services

Ron Zacharski

Artificial Intelligence (AI) research is concerned with developing computer systems that can think, reason, perceive, and use language the way human beings do. Although current AI systems are still far away from this ultimate goal, they can perform useful tasks in both education and research. In addition to University researchers who are working directly on AI research, there are those who use AI tools and techniques in other areas of study; artificial intelligence has the potential to aid research and instruction in all disciplines. For example, a University professor is now designing a natural language system that would tutor

students who are taking a foreign language course. The system would assist these students in developing parsing strategies. Other researchers are modelling human cognitive functions on a computer.

Both expert systems and natural language processing can enhance computer-aided instructional programs by making them more sensitive to student responses. AI tools and techniques can also be used in a variety of research environments. A growing number of researchers (including several CLA professors at the University) are finding LISP and PROLOG

better suited to their research needs than FORTRAN or Pascal. Expert systems and natural language interfaces to application programs can make computer-aided research easier.

While some University researchers are currently using AI in their research, others have an interest but lack the resources to put their ideas to work. To continue to assist University faculty and students, ACSS now offers AI tools and consulting services. (For more information about current ACSS AI tools, see the box entitled **AI Tools**.)

We want to emphasize that we are not just providing a service to people who are interested in AI research. Rather, we wish to assist people who are interested in applying AI tools and techniques to any area of research. We believe AI can benefit a wide variety of disciplines and that AI techniques are applicable in many computing environments. While many groups within ACSS are involved in providing this assistance, central support is available from the Special Projects Group.

In This Issue . . .

Academic Computing Services and Systems (ACSS) continues to announce new services and improvements. The lead article this month, by Ron Zacharski of Special Projects, introduces our new Artificial Intelligence software and related services in AI consulting and programming support. Lawrence Liddiard announces a reduction in connect time charges for users of faster transmission rates—an important announcement, because ACSS is upgrading its facilities to enable most users to transmit data at these higher speeds. More reminders and announcements follow.

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Special Projects Group

The Special Projects Group provides general consulting on Artificial Intelligence, such as assisting people in using AI tools (e.g., answering questions about LISP or OPS5). They also provide ongoing support throughout a research project, starting at the design phase and continuing to the project's conclusion. They can, as necessary, modify existing software to better meet the needs of the researcher.

The Special Projects Group will provide this range of services to all faculty and students who are interested in using AI tools and techniques. The group includes advanced graduate students who have worked in AI research on

natural language processing and expert systems.

Since our goal is to assist the University community in using AI, we need to know what you want and what interests you have.

Expert systems can make computer-aided research easier.

So if you:

- Want to know if AI can be of use to you in your research
- Have a question about the AI languages available on

the CYBER, VAX, or micro-computers

- Are interested in using an expert system for pedagogy and need to know which expert system shell to use
- Need to know whether there is a LISP interpreter for an IBM-PC that will meet your needs or whether to use the VAX
- Are using PROLOG in your research but need on-going support

or have any other question, comment, or need, contact the Special Projects Group:

Special Projects Group
124 Shepherd Lab
376-2944

AI Tools

Two versions of LISP (UTLISP, ALISP) are available on the CYBER CA and one, VAX Common LISP, will be available on the VAX VX (the new 8600) when that machine is up and running. OPS5, an expert system tool, will also be available on the VX. Public domain versions of LISP, PROLOG, and Hope are available for MS-DOS microcomputers from the Special Projects Group. A public domain version of LISP is also available for the Apple Macintosh.

Math and Engineering Packages

Library Changes and Additions

Michael Frisch

On January 9, we recompiled the algebraic manipulation package REDUCE2 with the latest version of LISP (5.1). This should not cause any changes for REDUCE2 users.

On January 21, we removed the packages UMST, TYPESET,

DARE, FMT, UMTIMER, TXTFORM, TXTPLOT, TXTPRIN from the CYBER systems as noted in the August 1985 *Newsletter*. The PROSE package replaces TYPESET, TXTFORM, TXTPLOT, TXTPRIN, and FMT. MINITAB replaces ISIS. BMDP and SPSS replace UMST.

On January 21, we also replaced the package names for NSAP, SPICE, and SSAP with the names NONSAP, SPICE2, and SAP4, respectively. And on January 21 we added routines to the GRAFLIB library so that users no longer need to fetch MINNLIB when using GRAFLIB.

The Microcomputer Discount Program

Mark McCahill

It has been over a year and a half since we began the Microcomputer Discount Program, and some of you may have forgotten (or never heard) what the program is and how it works.

At its inception, the Microcomputer Discount Program was conceived as a way to lower the cost of microcomputer hardware and software for University departments, faculty, students, and staff. To this end, the University negotiated several large-volume purchase agreements with popular microcomputer vendors (including Apple, IBM, Zenith, Epson, Hewlett-Packard, and AT&T). For the University to receive the deep discounts now available through the Microcomputer Discount Program, the vendors require the University to provide technical support to microcomputer owners. We (the Microcomputer Systems Group) serve this function. Being able to meet vendor requirements for technical support is only half the battle, though.

To have a successful discount program, the University must also move a large number of machines. Because the University bookstores have the capital, retail business experience, and warehouse space necessary to run the discount program, the bookstores handle the business end of the discount program. So the Microcomputer Discount Program is a joint

venture; the bookstores handle the money, warehousing, and delivery of machines, and the Microcomputer Group answers the technical questions.

**When enquiring
about your micro
order, have your
order number ready.**

Given this organization of the discount program, there are some things you can expect, and some things that are unrealistic to expect. You can expect answers to questions such as, "What should I buy?" and "Will this display adapter work with that display?" from consultants in the Microcomputer Group. After all, answering those questions is part of our job. Expecting the clerks at the bookstores to know the answers to those questions is unreasonable; the bookstore clerks haven't been trained to deal with these questions, and answering technical questions is not part of their job. In the same vein, it doesn't do any good to complain to clerks at the bookstores that the equipment you ordered isn't arriving fast enough. The bookstore is at the mercy of the

vendors, and sometimes vendors simply don't ship us products as quickly as we'd like.

At the Micro HELP-Line lab (125 Shepherd Labs), you can get up-to-date price lists of hardware and software available through the Discount Program. You can also try out much of the discounted hardware and software at the lab and ask questions there to make sure the items you intend to order suit your purposes. Careful research and consideration before you order can save you much frustration later on.

There are a couple of things you can do to make things work better in the Discount Program. First, know exactly what you want to buy *before* you place your orders at the bookstores. If you aren't sure you are ordering the right equipment, please ask questions at the Microcomputer HELP-Line (125 Shepherd Labs, or call 376-4276). Second, if you want to enquire about the status of your order, you can make it easy on the clerks by having your order number ready. Given an order number, it is easy for the clerks to find your order. Without an order number it is much more difficult. Finally, if you place an order and the clerks at the bookstores seem a little frantic, please be patient. The clerks have processed a huge number of orders, with more coming in all the time.

Lower Connect Time Charges

Lawrence A. Liddiard

Over the next several months we will install equipment that allows faster character transmission rates. This equipment includes the Tellabs multiplexers for the public labs, the CDCNET front-ends on our CYBER computers, and the

new IBX phone system. We want to encourage you to use these new features.

As an incentive, we are changing our connect time charges so that they are independent of speed.

Effective February 1, then, the new charges are as shown in Table 1. These rates represent a **reduction** of charges for speeds above 120 characters per second (CPS) to the rate we previously charged for 120 CPS connections.

Table 1: New Connect Time Charges (in units of \$/hour)

Effective February 1, 1986

	<u>internal non-profit</u>	<u>external commercial</u>	<u>MERITSS instructional</u>
Interactive dialup	2.25	5.00	0.60
Remote job entry dialup	2.25	5.00	0.60
Public lab	3.50	6.55	0.60
CYBER 30 CPS dialup	1.30	3.00	0.60

The 30 CPS service and charge will disappear when we are on the new IBX phone system and no longer support in-house, low-speed modems.

Getting Output

Laser Printer Service

Guy Rydberg

In the middle of February, printers at Lind Hall and Lauderdale will be replaced with laser printers and the default for printed output will be laser output. Output at both sites will default to single-sided "landscaped" output that looks exactly like the present output except that it will be printed on white 8 1/2 X 11 inch paper. Users who require hardcopy output on

the traditional printers should use the FC=LP parameter on their ROUTE statements, which will cause their output to be printed on a traditional impact line printer at Lauderdale. All other output routed to Lind Hall (EA) or the Lauderdale facility (except special user forms) will be printed on the laser printers.

Soon you will also be able to route output files with options for duplex page printing, 66 or 88 lines per page, three-hole punched paper, landscaped or portrait formats, and grey bar output. Additional information on this facility will be published in the March *Newsletter*.

The Documentation Hunt

Steven Brehe

Finding the documentation you need for your computing project is sometimes a bit of a challenge. Users can purchase various computer manuals at any of the University's three general bookstores (the Minnesota Book Center on the East Bank, H. D. Smith on the West Bank, and Books Underground on the St. Paul Campus) but no one store carries all the manuals campus researchers need, and their stock changes according to demand. Here are a few pointers on finding computer documentation on campus.

By far the best selection of computing books and manuals is in the Minnesota Book Center in Williamson Hall, which carries IT textbooks and a large section of trade books on computing, and also operates the Electronics Desk. The trade books typically include books on programming languages and concepts and microcomputer operating systems, but may also include some of the better selling manuals for applications packages (like the SPSS manuals). If you're looking for a particular trade book that is not in stock, you can order it at the Book Center (or any of the other bookstores), but you will need to know the book's title and author. (Copies of *Books in Print* are available at all the bookstores to help you.) You will probably have to wait several weeks for your order to be filled.

The Electronics Desk in the Book Center carries some vendor manuals (e.g., publications of Control Data Corporation and Digital Equipment Corporation about the operating systems on

the computers they manufacture), documentation on some application packages on ACSS computers, and most ACSS documentation. Vendor manuals are expensive and demand for them is low, so the Electronics Desk cannot always guarantee that a particular vendor manual will be in stock when you want it. They can order vendor manuals for you but, again, you must expect a delay while your order is filled. If the Electronics Desk does not have ACSS documentation you need, they will order it; small orders can typically be filled the same day.

Unless you know a bookstore carries the manual you want, begin at the Minnesota Book Center.

The H. D. Smith Bookstore and Books Underground have smaller selections of text and trade books on computing, and these selections are determined by the needs of the campuses and departments they serve. They can also place special orders if you provide them with titles and authors. They will typically stock few vendor manuals unless there is a demand for them. (If you need to place a special order for a vendor manual, go to the Book Center's Electronics Desk.) These stores stock some ACSS manuals

for which there is a consistent demand (like the *Introduction to MERITSS Computing* or the *XEDIT User's Guide*) and will order others for you.

In summary, then, if you know a bookstore has carried a particular manual in the past, check there first; otherwise you should begin at the Minnesota Book Center. You can also call the Book Center to ask about text and trade books (373-3688) and manuals at the Electronics Desk (373-5734). To ask about text and trade books at H. D. Smith, call 373-4450; for Books Underground, call 373-0800.

If you are not sure what manual you need, or if you do not want to invest in one, consult Michael Dunham, our Reference Room Librarian in Lind Hall 128A (or call 373-7744). He maintains the most complete collection of computing manuals and guides on campus, including CDC and DEC vendor manuals and guides to using application packages on ACSS machines; the entire collection is catalogued on a data base, according to title, author, publisher, purpose of the package, and so on. A few documents (for example, the Yale Sparse Matrix Package manual) are difficult to obtain from the publisher; in those cases the Reference Room may be the only local public source for the document. If you are ordering vendor manuals at the Electronics Desk, Mr. Dunham can also help you get the correct order number and title you need. Finally, at the Reference Room you can consult manuals on the packages you will use and, when copyrights permit, purchase photocopies.

Winter Quarter Short Courses

1986

ELECTIVE COURSES

DI-3000 Graphics Routines	McAllister	Feb 17-28	(MWF)	2:15-4 pm	\$35,\$45,\$80
SPSS (Statistics Package)	Alberg	Feb 24-28	(MWThF)	2:15-4 pm	\$25,\$35,\$60
Magnetic Tapes in NOS 2	Oberg	Feb 25-Mar 6	(TTh)	2:15-4 pm	\$25,\$35,\$60
SIR DBMS Seminar	Oberg	Mar 24-26	(MTW)	9 am-4 pm	\$100,\$100,\$150

MICROCOMPUTER APPLICATIONS COURSES

(Absolutely limited to 10 per class)

(Introduction to *Micros* or equivalent knowledge is required for courses listed below.)

Intern. Word Perfect for Office Applications	Feb 13	(Th)	1:30-4 pm	\$25,\$35,\$60
Intern. Word Perfect for Authors	Mar 7	(F)	9:30 am-Noon	\$25,\$35,\$60

APPLE MACINTOSH OVERVIEWS

(Limited to 20 per class)

Beginning MacDraw and MacDraft	Feb 14	(F)	10 am-Noon	\$15,\$25,\$40
Microsoft Excel (Spreadsheet)	Feb 17	(M)	9:15-11 am	\$15,\$25,\$40
Statistical Programs for the Macintosh	Feb 25	(Tu)	2:15-4 pm	\$15,\$25,\$40
Preparing Newsletters & Brochures	Mar 5	(W)	2:00-4 pm	\$15,\$25,\$40

(includes overviews of PageMaker, ReadySetGo, & MacPublisher programs)

REGISTRATION: Registration is located at the ACSS Reference Room, 128A Lind Hall. (Hours: 8:00 am to 4:30 pm, Monday-Friday). Deadline for registering is 4:15 pm on the last working day BEFORE the class begins. If you need more information on short courses or registration, call Jerry Stearns, 376-8806.

FEES: Fees are listed above in order for the following groups: 1) University students, 2) faculty and staff, and 3) non-University enrollees. Course fees may be paid by cash or check or with a signed University journal voucher. We can no longer charge short courses to user accounts. NO refunds will be made after the class has begun.

System Notes

NOS 2 Queue Files

Guy Rydberg

With the conversion to NOS 2.4 many users are using the new WAIT QUEUE facility to obtain output from batch jobs and are not accessing their queue files. Users should be aware that, starting February 1, all queue files that

have not been accessed in over seven days will be purged from the system. The unaccessed queue files will be purged each weekend. This includes all queue files, both those in the WAIT QUEUE and those in the RBF (Remote Batch

Facility) print queue. Users should also be aware that disk space reserved by queue files is charged at the same rate as permanent files. Users who have questions concerning queue files should call the ACSS HELP-Line.

PHONE NUMBERS

Access:

CYBER(CA)—10, 30 cps 376-5730
 —120 cps 376-5706
 MERITSS(ME)—10, 30 cps 376-7730
 —120 cps..... 376-7120
 VAX/VMS(VA)—(autobaud) 376-8070

Accounts:

MERITSS 373-7745
 User Names 373-4548
 Computer-Aided Instruction 376-2975
 Computer Hours (recorded message) ... 373-4927

Consulting:

HELP-Line 376-5592
 8 a.m.—5 p.m., Monday-Friday
 Statistics Packages 376-1761
 1—2 p.m., Monday-Friday
 Data Bases 376-1761
 10—11 a.m., Monday-Friday
 Microcomputers 376-4276
 9:30 a.m.—noon and 1:30—4 p.m.,
 Monday-Friday
 Text Processing & Analysis,
 Artificial Intelligence 376-2944
 3-4 p.m., Monday-Friday
 Contract Programming 376-1764

Data Base Applications 376-1764
 Engineering Services 376-1023, 376-8153
 Equipment Purchase/Information 376-8153
 Lind Hall I/O 373-4596
 Graphics Software 376-5592
 HELP-Line 376-5592
 8 a.m.—5 p.m., Monday-Friday
 HOURS-line (recorded message) 373-4927
 Information, Wulling Hall 373-4360
 Information, Lauderdale 373-4912
 Instructional Labs 376-2703
 Instructional Services 373-7745
 Lauderdale Computer Room 373-4940
 Lauderdale Services 638-0523
 Newsletter Subscription 376-1491
 Permanent File Restoration 376-5605
 Professional Services Division 376-1764
 Project Assistance 376-1764
 Reference Room 373-7744
 Remote Batch (RJE) Services 376-2703
 Short Courses 376-8806
 Shuttle Bus Service 376-3068
 System Status (recorded message) 373-4927
 Tape Librarian: see Lauderdale Services

OPERATING HOURS

	CYBER (CA)	Low rate	MERITSS (ME & MD)	VAX (VA)
M-F	7 a.m.- 4 a.m.	8 p.m.- 4 a.m.	7:45 a.m. - 3:30 a.m.	7 a.m.- 4 a.m.
Sat	4 a.m.- 5:15 p.m.	4 a.m.- 5:15 p.m.	7:45 a.m. - 3:30 a.m.	4 a.m.- 5:15 p.m.
Sun	4 p.m.- 1 a.m.	4 p.m.- 1 a.m.	4 p.m. - 3:30 a.m.	4 p.m.- 1 a.m.

PUBLIC LABS – TWIN CITIES CAMPUS

Location	Batch	Interactive	Micro	Location	Batch	Interactive	Micro
<i>East Bank</i>				<i>West Bank</i>			
Arch 148			X	WaLib 9		X	
CentH		X		BlegH 25		*	
ComH		X		BlegH 90		X	
DiehlH 207		X		BlegH 140		X	
EltH 121, 125		X		MdbH		X	
EltH N640	X			OMWL 2		X	
FolH 14, 14a	X	X*	X	SocSci 167			X
FronH		X		<i>St. Paul</i>			
LindH 26		X		BaH		X	
LindH 128B		*		CentLib B50			X
LindH 306B			X	ClaOff 125	X		
MechE 308		X		* Research cluster; access to CYBER CA and VAX/VMS			
Physics 69		*		X in interactive column indicates access to MERITSS			
PiH		X		For more information see WRITEUP(LABS)			
SaH		X					
TerH		X					
VinH 4		X					

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Direct comments, suggestions, articles, announcements, and subscriptions to the editors at the address below, or call (612) 376-1491.

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**Academic
Computing
Services and
Systems**

Technical Publications
5 Wulling Hall
University of Minnesota
86 Pleasant Street SE
Minneapolis, Minnesota 55455

UNIVERSITY ARCHIVES
10 Walib

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Deliver to current occupant.