Andrew Consortium
School of Computer Science
Carnegie Mellon

The Andrew View

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June, 1993

Here in Smith Hall the Consortium staff is still engaged in converting AUIS to C++. Ez and typescript are already working with a number of insets on the RS/6000 platform. We'll demonstrate this at ...

... the upcoming Tutorial and Andrew Technical Conference with the Annual Meeting in between are scheduled for June 24 and 25.

For details, see below.

My own View

Wilfred J. Hansen, Director

I'm pleased to report that I will be presenting a paper at the IEEE 1993 Symposium on Visual Languages in Bergen, Norway. Here's the title and abstract:

Andrew as a Multiparadigm Environment for Visual Languages

Despite numerous innovations in visual languages, relatively little effort has been devoted to integrating visual languages with each other and with textual languages so each can be used for those purposes for which it is best suited. This paper advances a model for multiparadigm language environments which utilizes text in two roles, visual program organization and compiler input. The paper further shows that the Andrew User Interface System is a convenient framework for building language systems on this model. The approach is exemplified with a visual language for specification of string patterns.

Drop me a note if you'd like a copy of this paper.

Andrew Technical Conference

The 1993 Andrew Technical Conference and Consortium Annual Meeting will be held on the last Thursday and Friday in June. The tutorial on Thursday the 24th will cover conversion to C++ of existing code and writing new ATK objects in C++. This will be a conversion workshop. Send your code ahead of time and we will help you convert it.

That evening will be the dinner and annual meeting, with the conference proper on the 25th.

Wednesday, June 23

Checkin at Resnick Dormitory, Carnegie Mellon

7:30 Informal reception at Hansen's
5638 Northumberland 412 421 5121

Thursday, June 24

9:00 Registration and Hospitality Room 314C College of Fine Arts

9:30 Tutorial - Converting to C++
Wilfred J. Hansen

12:00 Lunch will be provided

1:00 Conversion workshop Room 5202 Wean Hall

6:30 Dinner TV Room in the West Wing of Resnick Hall
All conference attendees are invited to the dinner.

8:00 Annual meeting also in TV room
All conference attendees are welcome to join the discussion at the annual meeting; however, only organizations which are full members of the Andrew Consortium are entitled to vote.

Friday, June 25

9:00 Hospitality - Coffee and ...

9:30 Wilfred J. Hansen, Andrew Consortium, Carnegie Mellon
Progress Report on the Andrew User Interface System

10:00 Todd Inglett, IBM Rochester
Smart Styles: Text Styles with a Controller

10:30 break

10:45 Robert S. Kemmetmueller, IBM Rochester
Compressing Text Using ‘‘Compress’’

11:15 Ellis Cohen, Open Systems Foundation
UEC-II, UIMS for a Distributed Object-oriented Environment

11:45-1:30 lunch
featuring the "O", a Pittsburgh tradition

1:30 Todd Jonker, Alexandria, CMU
The ELAR Programming Language: From Large to Little

2:00 Mike Horowitz, Alexandria, CMU
The Alexandria Information Habitat: Supporting Long-term Information Management

2:30 break

2:45 Dean Rubine, Tactus, CMU
Tactus: Continuous Time Interactive Distributed Multi-media Application Development Toolkit Based on ATK

3:15 Susan Straub, Andrew Consortium, CMU
Survey of Andrew Sites

If you arrive before 4:00 on Wednesday, you can come directly to the Consortium offices. We’re now located in Smith Hall 106. Smith Hall is an obscure building tucked behind and between the wings of Hamburg Hall (it’s correct name is EDSH). If you’d like a map, send us mail and we’ll fax one to you.

If you are staying in the dorms, you can go directly to Resnick Hall after 4:00. There will be someone at the front registration desk from 4:00 till midnight. For those of you who are not staying in the dorms, you will probably still find our staff in Smith Hall ... feel free to drop by and say hello.

We’ll be trekking up to Fred’s house around 7:30 for some form of food substance. He lives at 5638 Northumberland in Squirrel Hill. CMU’s main campus is located on Forbes Avenue. If you’re arriving from the Airport, you’ll most likely be travelling up Forbes. To get to Fred’s, you should continue past CMU about 1/2 mile and make a left onto

Northumberland. Fred’s house is almost a half mile down on the right-hand side.

Registration will be Thursday morning at 9:00 in the Media Presentation Room in the College of Fine Arts, Room 314C. We will be in the CFA 314C until lunch (12:00) then move to the workstation cluster in Wean 5202. The workstations are connected to the internet so you can "phone home" so to speak. To participate in the conversion workshop, you may want to send us your code ahead of time. Send it to susan+@andrew.cmu.edu.

Dinner is scheduled for 6:30 in the TV Room in the West Wing of Resnick Hall followed by the Annual Meeting in the same location. If you have any special dietary restrictions, please let us know. Members and non-members are welcome to attend the Annual Meeting, although only representatives of member organizations are allowed to vote.

The talks on Friday will begin at 9:30 after hospitality at 9:00. We’ll be in CFA 314C throughout the day on Friday, except for our trek to the ’O for lunch. (The O is a CMU Computer Science Dept. tradition.) Bring your walking shoes if you’d like to join the bunch.

If you get lost, just ask someone on campus to point you to the College of Fine Arts. Room 314 is on the South end of the building (near the elevator).

Questions to Susan Straub
susan+@andrew.cmu.edu
(412) 268-7326
FAX (412) 682-6938

Possible Projects for 1993-1994

The annual meeting portion of the Andrew Technical Conference will discuss various possible future projects for AUIS. In preparation, we have prepared a list of possible projects for consideration. Please send us any comments, additions, or deletions you may have.

"Widgets": Provide a complete set of widgets including textfield, various flavors of button, slider, optionmenu, bargraphs, dials, and so on. Each widget should be able to: be inserted anywhere, print, interact with user, initiate the extension language, report values to the extension language, interface to a style selection service so authors can modify image. The ’figure’ inset needs to be enhanced, if necessary, to serve as a convenient substrate for widgets.

Decorations and other wrappers: Design a mechanism for insets to put on / take off arbitrary decorations (borders, scroll bars, etc) or wrappers (name space, script, size handles, ...). This should have a user-level interface in ADEW or some enhanced version thereof.

Template amenities: Shared templates so every text in a table can always have a template. Multiple and recursive templates so specifications can be distributed.

World-wide web: (See article below.) Build converters to/from the HTML document representation understood by WWW servers. Build a server so web requests can be met directly from document in ATK format (they would be translated to HTML on the fly). Build an AUIS application to access the web.

Architect a new printing model for ATK. Use PostScript(?). Use ghostscript or DisplayPostScript.

Printing amenities like floating keeps, two-column output, and setting the page size.

Toolset for the ‘image’ inset.

Simplify toolsets: If a toolset is visible and there is a click in an inset to which that toolset is relevant, then that toolset should be connected to that inset.

Replace keyboard and mouse hit models with something like events.

Provide a ‘graphics context’ model. This would be used instead of explicitly setting all graphics parameters for each drawing operation.

More and better programmer’s documentation.

Handle gracefully insets which do not exist.

Allow the data of insets to reside outside the file in which the inset is embedded.

Provide a way to filter newsgroups in ‘messages’ so you would only see headers for those messages the filter selects. This may have to be based on headers only to reduce server traffic.

Convert ‘messages’ to some more widely used message server mechanism.

Paragraph or line numbers visible for text (as for example numbering the stanzas of a poem or the lines of legal document).

Implement ‘Undo’.

Individual releases of AUIS

From the earliest days of the Consortium, individuals have asked for memberships. It has never been practical to offer individual memberships, but we have now developed a new distribution license for individuals. This will be presented at the Annual Meeting (24 June). If approved, individuals will be able to get a copy of the latest sources for a nominal distribution charge. Licensing restrictions will accompany the distribution and limit the software to that one individual.

If you have any comments on this proposal, please let us know.

Information Retrieval Conferences

Immediately following the Andrew Technical Conference in Pittsburgh will be the annual ACM conference on Information Retrieval sponsored by SIGIR. Their conference announcement includes:

ACM SIGIR ’93
16th International Conference on Research and Development
in Information Retrieval

Pittsburgh, PA, USA
June 27-July 1, 1993

In co-operation with ACM:
AICA-GLIR (Italy) BCS-IRSG (UK)
DD (Denmark) GI (Germany)
INRIA (France)

PRELIMINARY PROGRAM AND REGISTRATION INFORMATION

The annual ACM SIGIR conference is the primary international meeting for the presentation of research and development in information retrieval (IR). The conference will be valuable to those interested in the theory of information retrieval as well as those responsible for system design, testing and evaluation. Topics include association methods, query processing, data and file structures, DBMS integration, structured text, inference networks, interface issues,and natural language processing.

This year the conference will be held in Pittsburgh, PA, USA, within easy reach of major east coast centers. The city centre conference site overlooks the three rivers, providing access to parks, restaurants and shopping, cultural amenities and sporting events.

Pre-conference tutorials will cover both beginning and advanced topics. The main program consists of contributed papers as well as panel sessions and demonstrations. There will be two post-conference research workshops, User Interfaces for Online Public

Access Catalogs, and Information Access and the Networks.

Conference highlights include:

Sunday * Tutorials
* Reception
Monday * Keynote address: Bruce Buchanan
* Text REtrieval Conference (TREC) overview
Tuesday * Panel session: NLP for Information Management
* Cruise and Banquet on Pittsburgh’s Three Rivers
Wednesday * Demonstrations
* Reception
Thursday * Post-conference research workshops:
User Interfaces for Online Public Access Catalogs
Information Access and the Networks
* Tour of Frank Lloyd Wright’s Fallingwater
* Tour and Open House at Carnegie Mellon University

Tutorials
Sunday, June 27, 1993

AM:
Introduction to Information Retrieval
Keith van Rijsbergen, University of Glasgow
Developing Information Retrieval Applications
using Object Database Technology
David J. Harper, University of Glasgow
Trends in Multimedia Development
Alan Griffiths, University of Sheffield

PM:
Natural Language Processing for Information Retrieval
David Lewis and Elizabeth Liddy,
AT&T Bell Labs. & Syracuse University
Information Retrieval and Databases
Norbert Fuhr, University of Dortmund, Germany
Non-Textual Compression in Full-Text IR Systems
Shmuel T. Klein, Bar-Ilan University, Israel

FOR FURTHER PROGRAM AND REGISTRATION INFORMATION CONTACT:

SIGIR ’93 Conference Secretariat
School of Library and Information Science
University of Pittsburgh

Pittsburgh, PA 15260, USA

tel: (412) 624-9459; fax: (412) 648-7001
email: sigir@lis.pitt.edu

INFORMATION ACCESS AND THE NETWORKS
A Research Workshop (held after SIGIR'93)
July 1, 1993 --- Pittsburgh, PA

Information access involving networks is one of the most important growth areas in the broad field of information technology. User demand has caused a massive growth in the size of the Internet and the amount of information accessible on it. This has made it imperative to develop new technologies to provide an infrastructure for this new information space. This workshop will bring together researchers and developers to discuss network-based information services in both general and specific terms, drawing upon those attending ACM SIGIR '93 and the communities related to:

> Archie, Digital Libraries, Gopher, HyperPage, Knowbots, NCSA Mosaic, NNTP/Usenet, Prospero, Veronica, WAIS, WWW (WorldWideWeb), Z39.50

along with other related initiatives, protocols, systems, and services.

Further information is available from:
Ed Fox, (fox@fox.cs.vt.edu; foxea@vtcc1.bitnet) or
Chris Tomer (ianet@lis.pitt.edu)

Gnu Ispell 4.0

The "Check Spelling" option on Andrew's Search/Spell menu calls on the ispell software. Recently the Free Software Foundation has announced the release of a new version of ispell. Since we're busy converting to C++, we have not tested this version with AUIS; if anyone does, we would be pleased to hear how it works.

Here is the announcement:

> GNU Ispell 4.0 is available via anonymous FTP from prep.ai.mit.edu in /pub/gnu/ispell-4.0.tar.z (this file is compressed with 'gzip', *not* the unix 'compress' or 'pack' programs). [gzip is also available from the FTP sites.]
>
> Ispell is an interactive spell checker that finds unrecognized words and suggests "near misses" as replacements. Both system and user-maintained dictionaries can be used. ... standalone[, AUIS,] and GNU Emacs interface are available.

Please report bugs to bug-gnu-utils@prep.ai.mit.edu.

[...
The above software will soon be at these ftp sites as well. Please try them
before prep.ai.mit.edu!   thanx -gnu@prep.ai.mit.edu
ASIA: ftp.cs.titech.ac.jp, utsun.s.u-tokyo.ac.jp:/ftpsync/prep,
  cair.kaist.ac.kr:/pub/gnu
AUSTRALIA: archie.oz.au:/gnu
EUROPE: irisa.irisa.fr:/pub/gnu, grasp1.univ-lyon1.fr:pub/gnu,
  ftp.mcc.ac.uk, unix.hensa.ac.uk:/pub/uunet/systems/gnu,
  src.doc.ic.ac.uk:/gnu, ftp.win.tue.nl, ftp.informatik.tu-muenchen.de,
  ftp.informatik.rwth-aachen.de:/pub/gnu, nic.funet.fi:/pub/gnu,
  ftp-admin@ftp.technion.al.il:/pub/unsupported/gnu, isy.liu.se,
  ftp.stacken.kth.se, ftp.luth.se:/pub/unix/gnu, ugle.unit.no,
  ftp.denet.dk, ftp.eunet.ch, nic.switch.ch:/mirror/gnu, archive.eu.net
USA: wuarchive.wustl.edu:/mirrors/gnu, labrea.stanford.edu,
  ftp.kpc.com:/pub/mirror/gnu, ftp.cs.widener.edu, uxc.cso.uiuc.edu,
  col.hp.com:/mirrors/gnu, ftp.cs.columbia.edu:/archives/gnu/prep,
  gatekeeper.dec.com:/pub/GNU, ftp.uu.net:/systems/gnu
]

Information online

A list of network information services is available for anonymous FTP from csd4.csd.uwm.edu under the name pub/inet.services.txt. The header of the file describes itself thusly:

* SPECIAL INTERNET CONNECTIONS: Last Update: 6/3/93 *
  * Compiled By: Scott Yanoff - yanoff@csd4.csd.uwm.edu *

A list of public domain text has been prepared as an FAQ by Thomas Dell. It dscribes its own distribution as:

Online Books FAQ :: 6/1/93

This FAQ addresses mainly the availability of PUBLIC DOMAIN sources of Etext available on the Internet. By "public domain" we mean text that is unencumbered and free from copyrights.

[This FAQ is being crossposted to rec.arts.books, comp.text, alt.internet.services, and comp.infosystems.gopher as well. It will be crossposted to news.answers when it is past draft stage.]

dell@wiretap.spies.com / Thomas E Dell

Be Heard

Now there is a new way to be heard in the land, send email to the President. The memo below comes from reliable sources and gives an address to send email to Bill. As yet, they do not appear to have MIME, so just use the Remove Formatting and Send option from sendmessage.

Date: 1 Jun 93 19:18:22 UT
From: "Jack S. Fox "
Subject: FYI - Internet Mail Press Release for President and V.P.
Message-Id: <"22815110603991/6419 EOPMRX"*@sprint.com>

FYI -

We plan to start accepting mail this afternoon.

Jack

THE WHITE HOUSE

Office of Presidential Correspondence

For Immediate Release June 1, 1993

LETTER FROM THE PRESIDENT AND VICE PRESIDENT
IN ANNOUNCEMENT OF
WHITE HOUSE ELECTRONIC MAIL ACCESS

Dear Friends:

Part of our commitment to change is to keep the White House in step with today's changing technology. As we move ahead into the twenty-first century, we must have a government that can show the way and lead by example. Today, we are pleased to announce that for the first time in history, the White House will be connected to you via electronic mail. Electronic mail will bring the Presidency and this Administration closer and make it more accessible to the people.

. . .

However, we must be realistic about the limitations and expectations of the White House electronic mail system. This experiment is the first-ever e-mail project done on such a large scale. As we work to reinvent government and streamline our processes, the e-mail project can help to put us on the leading edge of progress.

Initially, your e-mail message will be read and receipt immediately acknowledged. A careful count will be taken on the number received as well as the subject of each message. However, the White House is not yet capable of sending back a tailored response via electronic mail. We are hoping this will happen by the end of the year.
. . .
This is an historic moment in the White House and we look forward to your participation and enthusiasm for this milestone event. We eagerly anticipate the day when electronic mail from the public is an integral and normal part of the White House communications system.

President Clinton   Vice President Gore

PRESIDENT@WHITEHOUSE.GOV
VICE.PRESIDENT@WHITEHOUSE.GOV

The Andrew User Interface System

The Andrew User Interface System (AUIS) is a portable user-interface environment and toolkit that runs under X11. It provides a dynamically-loadable object-oriented environment wherein objects can be embedded in one-another. Thus, one could use our 'generic-object' editor (ez) to edit text that, in addition to containing multiple fonts, contains embedded raster images, spreadsheets, drawings, equations, simple animations, etc. These embedded objects may themselves contain other objects, including text. The release includes many objects, including those mentioned above, along with a help system, a system monitoring tool (console), an editor based shell interface (typescript).

The underlying Andrew Toolkit architecture (ATK) supports not only screen display, but also file storage, cut/paste across windows, an application construction environment, an extension language, and printing. There is full support for programmers to create new objects and new applications.

The Andrew Message System(AMS) is a component of AUIS and provides a multi-media interface to mail and bulletin-boards. AMS contains many advanced features including authentication, return receipts, automatic sorting of mail, vote collection and tabulation, enclosures, audit trails of related messages, and subscription management. It also provides a variety of interfaces that support character-based terminals and low-function personal computers in addition to high-function workstations.

The following are components are available in version 5.2 and later versions. Some respond to frequently requested applications in X: word processor: ez, drawing editor: figure, mail and news reader: messages, font editor: bdffont, documentation presentation: help, directory browser: bush.

AUIS applications (graphic and interactive)

bush - directory browser
chump - schedule maintainer
console - shell interface / terminal replacement
ez - word processor and program editor

fdbbdf - font editor (for fonts in bdf format)
help - documentation browser (includes all AUIS help files)
launch - provides a menu of AUIS applications
messages - mail and news reader, manager, and composer
pipescript - viewer useful as stdout
prefed - preferences editor
sendmessage - application for sending a message or news posting
typescript - shell interface (terminal substitute)

Graphical, interactive editors that are both applications and insets

eq - equation inset
fad - animation editor
figure - drawing editor
layout - inset for arbitrary layout of enclosed insets
lset - display two adjacent insets
ness - extension and string processing language
org - display and edit hierarchies
page - allow flipping between pages
raster - editor for monochrome bitmapped images
table - table / spreadsheet inset
text - text, document, and program editor (the heart of ez and other applications)

Commonly used non-interactive AUIS applications

datacat - concatenate ATK files
ezprint - print an ATK document
nessrun - runs a Ness script (the extension and string processing language)
preview - preview an ATK document on screen

File format converters

from ATK to: RTF, ASCII, PostScript, troff
to ATK from: ppm, Scribe, RTF, troff, X window dump
convertraster - various raster formats

Embeddable insets not usually used as applications

clock - analog clock
eq - equations
fad - rudimentary animations
header - specify document headers and footers
image - display images
link - hypertext-like link
month - display one month calendar
note - annotation
text - the text object itself
timeoday - digital clock
writestamp - time file was written

Editing tools

compchar - type characters for European languages
compile - support compilation and error review
complete - filename completion for typescript
dired - directory browser
dsearch - dynamic search
ezdiff - compare two ASCII files
filter - process a region of a document through a shell command
isearch - incremental search
lookz - style table editor
spell - spelling correction (uses ispell)

Source text editing tools for

assembler, C++, C, Lisp, man pages, Modula, Modula-3, Pascal

Tools for constructing insets and applications

arb - ADEW application builder interface
bison - GNU parser generator (modified)
class - preprocessor for ATK object system header files
createcon - ADEW tool to generate C code for interface
createinset - create a prototypical inset under a new name
doindex - classC postprocessor
genmake - Makefile generator for classC
gentlex - lexical analyzer generator
makedo - classC post processor to create objects
runadew - ADEW application builder
whichdo - find an inset on the CLASSPATH

Additional insets available for building applications

button, display text string, entry of labeled text string, four position switch, multiple buttons, multiple sliders, multiple string entry, on/off switch, slider, slider controlling array of strings, text list, thumb knob

Consortium Services and Offerings

For information about services and offerings of the Andrew Toolkit Consortium please contact us at:

Information Requests
ATK Consortium
Carnegie Mellon University
Smith Hall 106
5000 Forbes Avenue
Pittsburgh, PA 15213-3890
USA
phone: +1-412-268-6710
info-andrew-request@andrew.cmu.edu

We offer:

Memberships at three levels: Full, Contributing, and Associate
Source tape

CDrom with both source and executables
Bibliography
Copies of papers
Videotapes
Conference proceedings

Sources and binaries are available online via anonymous ftp from
emsworth.andrew.cmu.edu (128.2.45.40)
where the full CDrom release is in the ./cdrom directory. See the README there. Another ftp site is
export.lcs.mit.edu (18.30.0.238)
in directory ./contrib/andrew; this is cloned on many servers, world-wide. On the nationwide AFS file system, AUIS is available in
/afs/andrew.cmu.edu/itc/sm/releases/X.V11R5/ftp/cdrom/

Remote Andrew Demo service:
finger help@atk.itc.cmu.edu

News groups:
info-andrew+@andrew.cmu.edu
This is a distribution list offering the news with full AUIS formatting; send subscription requests to info-andrew-request@andrew.cmu.edu. For newsgroup in plain ASCII, see
comp.soft-sys.andrew

Andrew has been successfully used on (at least) these platforms:
IBM: RT AOS 3.4, RT AIX 2.2.1, RS/6000 AIX3.1, PS/2 AIX1.2
SUN: Sun3 3.5, Sun3 4.0, Sun4 4.0, Sun3 4.1, Sun4 4.1, Sun4 Mach
DEC: Vax Ultrix 3.1, Vax Ultrix 4.2, Vax BSD, DEC MIPS, Pmax Mach
other: HP, SCO I386, SGI IRIX 4.0, Apollo, Macintosh II MacMach, 486 Mach

Send requests to
info-andrew-requests@andrew.cmu.edu
Send bug reports to
info-andrew-bugs@andrew.cmu.edu