



McGill

C e n t r e f o r

Intelligent Machines

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Newsletter

Open House '96

In conjunction with the 175th Anniversary celebrations, McGill will be holding an open house on Sept. 20 - 22. "Open House '96 will provide McGill with a wonderful opportunity to share who we are with the rest of the community." The Faculty of Engineering will play an important role and CIM has already begun to draw up ideas and plans for its participation.

We will need many CIM volunteers to organize this event. Volunteers will be asked to prepare demos, but also to write pamphlets for handouts, produce material for posters and videos, organize, set up, and clear the displays in the tent on the 'Main Street', and act as guides during the scheduled tours of the CIM labs. All the written material must be displayed in both languages and the guides should be bilingual.

Visitors will include not only prospective students, but also government officials and members of the business community as well as the general public, including many children. Presentations will therefore have to be kept simple, short, catchy and fun! Also, note that the Open House is scheduled for three full days (Friday, Saturday, Sunday), so we are asking for as many of you as possible to volunteer some of your time and talent to this very important event.

Although September may seem far away, deadlines for organizing such a grand scale event at McGill are very tight and many preparations are already well under way. CIM faculty have already agreed to set up one or two demos in the tent and there will be at least four demos here at CIM. Once we get a number of volunteers together, we will start holding regular meetings to organize the events. If you'd like to be involved, please send a message to <jmb>.

McGill-Universidad Iberoamericana Collaborative Research Project

In the Fall Newsletter of McGill International, it was announced that seven new Agreements for Collaboration had been signed by Principal Shapiro. This Agreement establishes a mechanism for academic exchange and research collaboration between McGill and partner institutions, wherein one specific McGill unit initiates and takes responsibility for a proposed activity. One of these projects is headed by Prof. Jorge Angeles.

This project was officially initiated in January 1995, its purpose being to further develop a methodology for the design of a novel class of mechanical transmissions. The McGill team is led by Prof. Jorge Angeles, the Mexican counterpart by Prof. Max A. González-Palacios, of Universidad Iberoamericana at Leon (Mexico).

The latter is a McGill University graduate (Ph.D. 1992), who worked under Prof. Angeles' supervision. His thesis on a theoretical framework for the design of indexing cam mechanisms proved to be more far-reaching than originally anticipated, for it has opened a new research avenue leading to novel mechanisms beyond the originally intended class. Applications have been found, for example, in the design of shaking mechanisms, where a periodic speed is produced from a uniform speed, as well as in the design of reciprocating mechanisms for relatively large strokes, where normally cam mechanisms are not applicable because of their unacceptably large space requirements. Current research focuses on the design of a new generation of mechanical transmissions that are expected to outperform current gear trains in that they are free of backlash and friction. Moreover, contrary to harmonic drives, these transmissions offer a high stiffness and, hence, a broader bandwidth of operation speeds. Applications envisioned of this

new generation of transmissions are in robotics and mechatronics, where accuracy is critical. More traditional areas, like simple power transmission at a reduced speed, may also find these novel transmissions interesting, for, contrary to gear transmissions, they offer attractive advantages with regard to manufacturability in that they can be produced with common NC machine tools.

As a byproduct of this research effort, a design tool, USYCAMS (pronounced "you see cams"), has been produced. USYCAMS is a highly interactive software package that allows the on-line design of cam-based mechanisms for the most varied type of applications. In a typical design session, the designer may not need to even touch a single key, for the package is menu-driven and responds to the click of a mouse. The graphic capabilities of USYCAMS are state-of-the-art, for it has been developed on the best performing Silicon Graphics workstations both at CIM and at Universidad Iberoamericana.

Further details on the project are available from the project leaders, who can be reached at: angeles@cim.mcgill.ca; maxg@amoxcalli.leon.uia.mx.

CIM's Website

As you may have heard, the CIM Annual Report is now available on the Web. After many months of work the CIM Webteam, under the leadership of Thierry Baron, Benoit Dubuc, and Nigel Ayoung-Chee, is proud to announce to the world that in the interest of saving trees, hard copies of the report are available only upon request. We invite everyone to visit the site at the following address: [http://www.cim.mcgill.ca/CimInfo/94-95Annual Report/](http://www.cim.mcgill.ca/CimInfo/94-95AnnualReport/) Please feel free to send us your comments.

NEWS AND EVENTS

Hats off to ...

Benoit Dubuc successfully defended his thesis entitled '*On the complexity of curves and the representation of visual information.*' Benoit told us: "My plans for next year are to do a Post-Doc. at

l'Université de Montréal with Gilles Brassard in Kolmogorov complexity and its use for the organization of visual (but also WWW) information. I will also concentrate on a startup company called "Espace Courbe" which, for the moment, is offering services for the WWW. We invite you to go visit our URL at <http://www.espacec.com/> and give us support by voting for us for the "Webs d'Or" contest. Aside from that there are also plans to turn my thesis into a book jointly with Steve Zucker. As you see, it will be a pretty busy year!" Benoit is also teaching two Continuing Education courses on the Internet and the Web in both English and French in January and February. Congratulations Benoit and good luck!

Yuanjun Wei is very happy to report that he has been hired by BNR in Montreal as of Monday January 8. Although he worked in Ottawa for several months, his heart was really here. Welcome back Yuanjun!

Just as he was about to announce that he finally found a great job, Joey Mennitto sent us this news: "I thought you may like to know that I have accepted another job offer. Spar offered me something that I couldn't refuse and CAE did not match it. This all came together the first week of the new year." Happy New Year, Joey!

Ferhan Bulca sent us this message: "It is difficult to adjust to the 'normal' life after being around CIM for so long but it was about time for me. I started working for Placage Unique where I am responsible for automating the manufacturing line. The job is challenging but also quite fun. I am learning new aspects while practicing many things I learned at CIM. You will still see me at CIM nights and during the weekend while I am finishing my thesis." Good luck, Ferhan!

Kostas Kontogiannis is teaching at U of T, in Computer Science, and is hoping to submit his thesis this month. He spends time here in the lab on weekends and was here over most of the Christmas holiday working on his thesis. All the best, Kostas.

☞ **M**ichael Galler is working for Panasonic in Santa Barbara, California! He is also hoping to submit by the end of January but we haven't seen much of him around the Speech Lab lately. Could the snow be a deterrent? Good luck, Michael!

☞ **J**ennifer Quinn reports that Marcello Pelillo sends his regards from Venice to all his friends at CIM.

☞ **J**ust before the Christmas break, the Mobile Robotics Group received a new addition to their family. The new robot arrived from Cyberworks, Inc. in Orillia, Ont. and is here on loan as part of the Arias project.

On arrival, the robot was immediately dubbed **Quasimodo**. When pressed, members of the group admitted that the robot in fact has no hunch but when asked about the name, group members were quoted as saying "It just seemed to fit".

21st Annual McGill Cancer Research Auction

For the past 20 years, the Management Undergraduate Society has organized an auction to support the Canadian Cancer Society. Last year's event raised approximately \$10,000.

Members of the Montreal business community have donated various products and services to be auctioned including: A Hewlett Packard DeskJet, a Guess jacket signed by Jean-Luc Brassard, a hockey stick autographed by Mario Lemieux, a baseball signed by all the Expos, passes to Le Sanctuaire Health Club, weekend getaways for two, hockey tickets, ski-lift tickets, assorted dinners...

Please come show your support and help to find a cure for this dreaded disease. The auction takes place on January 17, 1995 from 10 - 5 in the Shatner Building Cafeteria, 3480 McTavish, 2nd floor.

Another call for singers and would-be singers for CIM choir

Want to sing but don't know where to go or could never find the time? Want to sing but were always too shy, or were told you had no voice, or always thought you couldn't, or never had the opportunity? Want to sing with your friends from CIM, but never thought they would go for it? Here's the answer to all your hopes and dreams - the **CIM Choir**!

Come join us for fun, relaxed sessions of music-making every week. The aim of the choir is to help people learn about and develop their voices in a friendly, non-judgmental environment, and at the same time learn new songs and music. No experience is necessary, only enthusiasm and a positive attitude is required. When: Thursdays 4:30 PM, Where: CIM Seminar Room 437

For more info: email anlin@cim

Articles & ideas are welcome. Please send them by e-mail to the editor: Deadline for publication is the 7th of every month.

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CIM Horoscope for the Month of January

Well 1996 is upon us, and it has brought with it the cold that freezes your nostrils when you breathe in too fast. Even though human activity slows to a conservative bare minimum this time of year, one should still know what lies in ones path.

Aries (March 21 - April 19)

You, of all of the signs, know how to live with, and even enjoy the cold. Your car is never stuck in the snow, and you never slip on the ice. Life must be so good, I don't know why you're reading a horoscope!

Taurus (April 20 - May 20)

You have been working hard of late, and it's time for a vacation. I see an island with volcanoes,

pineapples and grass skirts! Wait...there's more! Silly looking shirts and all the Macadamia Nuts you can eat. But maybe I'm wrong.

Gemini (May 21 - June 20)

Alas, no vacation for you, Gemini. You've had it pretty easy of late, and it's time to put your nose to the grindstone. Your dual nature means you can do two things at once, but no more. Take some time to frolic in the snow, but no more!

Cancer (June 21 - July 22)

This is the time for hibernation for you, and maintenance. You spend too much time worrying about other people's problems. Let them look after themselves. Do the same for yourself! Stay away from people and objects that suck your time and energy.

Leo (July 23 - Aug 22)

The lion's roar is muted. Do you have a big presentation coming up? Tread softly, and carry no stick at all. The best defence lies in no offence from you.

Virgo (Aug 23 - Sept 22)

Your sign belies you. You've followed every passing fad, a slave to fashion. It's time to re-invent yourself again, and return to whom you really are. A tall stranger tempts you, but you must resist.

Libra (Sept 23 - Oct 22)

Poor Libra. Forever trying to balance the opposing forces that rule your life. Yin and yang, summer and winter, the art and the science. What will you do? The wheel of fortune in your life does not star Vanna White.

Scorpio (Oct 23 - Nov 21)

Your biological clock is not yet in synch with the new year. You must do everything in your power to fix this! Listen to music with lots of drums, like Paul Simon's *Rhythm of the Saints*. You might even

consider buying yourself a bongo for a little R and R, or even just watching a lot of *I Love Lucy*.

Sagittarius (Nov 22 - Dec 21)

This month won't *sag* like the beginning of your sign, but it definitely won't *ittarius* either. This leads to a fork in the road for you. All possibilities are open to you with forks...except eating soup of course.

Capricorn (Dec 22 - Jan 19)

Your sign is in the ascendancy, but beware the mighty Aries for the moment. The season isn't right for you, yet. The ice still clings to your fur, and you haven't shaken the snow clouds from your head.

Aquarius (Jan 20 - Feb 18)

The water carrier brings us no water this time of year, but only ice crystals. You're frozen, Aquarius. Take heart from the lack of progress, and know this – summer will come, and you will run free again.

Pisces (Feb 19 - March 20)

It's time for you to realize that while candlelight dinners are appropriately romantic, those red, glass, "Pizza Hut" style candles are just plain tacky. You should probably throw them out, but in the spirit of charity, it might be a nice New Year's gesture to donate them to a bachelor friend.

Jojo CimVard

