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## AI's Geographic Outreach: Mexico and Latin America

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It was 4:00 p.m., 4 August 1999, when the International Joint Conference on Artificial Intelligence executive meeting ended and announced that IJCAI 03 would be held in Acapulco, Mexico. This happened during IJCAI 99

in Stockholm, Sweden. The bid the Mexican Society for Artificial Intelligence (SMIA) submitted—with the support of the AI communities from Argentina, Brazil, Chile, and Venezuela—was selected after competing with bids from other countries. Due to its geographic coverage, IJCAI 03 was coined the *Latin American AI Conference*. Here, I survey the AI activities in Mexico and the South American countries with AI societies.

### Latin American AI communities

Latin America consists of Mexico, Central America, and South America. Brazil's language is Portuguese, whereas the rest of the LA countries speak Spanish except French Guiana, which speaks French. English is spoken in the Caribbean West Indies Antilles, Suriname, and Belize—these areas are not considered LA. Spanish, Portuguese, French, and Italian are called Romance languages because they have their roots in Latin. For this reason, this part of America is LA. If you speak one Romance language, it's relatively easy to understand others. Portugal and Spain are part of the Iberian Peninsula, and that's why the region constituted by LA, Portugal, and Spain is called Ibero America.

Although from a geographic standpoint Mexico is considered part of North America (consider the North American Free Trade Agreement among Canada, the United States, and Mexico, for example), Mexico shares more cultural ties with the LA region given their common language, ethnic origins, religion, and history. The main AI communities in LA are found in Mexico, Brazil, Argentina, Chile, and Venezuela.

During the last three decades, active AI researchers in LA countries have been primarily educated in universities in North America, Europe, or Japan. This group consti-

tutes the first generation of LA AI researchers. An important percentage of them have joined national universities, where they've organized academic graduate programs to educate the next generations of AI researchers.

### Regional efforts

The Iberoamerican Conference on Artificial Intelligence originated in 1988 with the support of the AI societies of Mexico, Spain, and Portugal, with later support from Venezuela, Cuba, Brazil, and Argentina. Iberamia has met biennially since 1988:

- Barcelona, Spain, 1988
- Morelia, Mexico, 1990
- La Habana, Cuba, 1992
- Caracas, Venezuela, 1994
- Cholula, Mexico, 1996
- Lisbon, Portugal, 1998
- Atibaia, Brazil, 2000
- Sevilla, Spain, 2002

It attracts between 200 and 400 delegates. The conference language is English, and the proceedings are published in Springer's *Lecture Notes in Artificial Intelligence* (LNAI) series.

### National activities

In Brazil, Argentina, and Chile, the AI groups are affiliated with computer science associations in these countries. The Brazilian AI community (SBIA) has organized an annual AI national symposium of the same name since the early eighties. The 15th SBIA was collocated with Iberamia in 2000 and attracted almost 200 delegates. SBIA also organizes the biennial International Brazilian AI Conference (ENIA) as well as JAIA (National Training and Update on AI).

The Special Group on AI of the Argentine Association for Informatics and Operations Research (SADIOS) organizes the Argentine Symposium on Artificial Intelligence.

## Latin American AI Resources

Here is a list of Latin American AI groups and their associated Web sites, many of which offer meeting summaries, email newsletters, or discussion boards.

### Argentina

The Argentine Society for Informatics and Operations Research (SADIO), Special Group on Artificial Intelligence (SGAI) leads AI activities in Argentina. Iberamia 04 will meet in Argentina.

[www.sadio.org.ar/Sadio.htm](http://www.sadio.org.ar/Sadio.htm)

### Brazil

The Brazilian Computer Science Society, Special Commission on Artificial Intelligence, leads AI activities in Brazil. BCSS-SCAI has organized the annual Brazilian AI Symposium since the early eighties. They also organize the biennial International Brazilian AI Conference (ENIA) as well as JAIA (National Training and Update on AI).

[www.sbc.org.br](http://www.sbc.org.br)

### Chile

Researchers from the Chilean Computer Science Society (SCCC) lead AI activities in Chile. SCCC has held the annual Chilean Computer Science Conference since the early eighties.

[www.sccc.cl](http://www.sccc.cl)

### Mexico

The Mexican Society for Artificial Intelligence (SMIA) organizes AI activities in Mexico. SMIA organizes the biennial Mexican International Conference on Artificial Intelligence. MICAI 04 will meet in Morelia, Mexico, in April 2004.

[www.smia.org.mx](http://www.smia.org.mx)

### Venezuela

The AI Laboratory at Universidad Simon Bolivar (USB) currently leads AI activities in Venezuela.

[www ldc.usb.ve/~cchang](http://www ldc.usb.ve/~cchang)

### ITESM-CAI

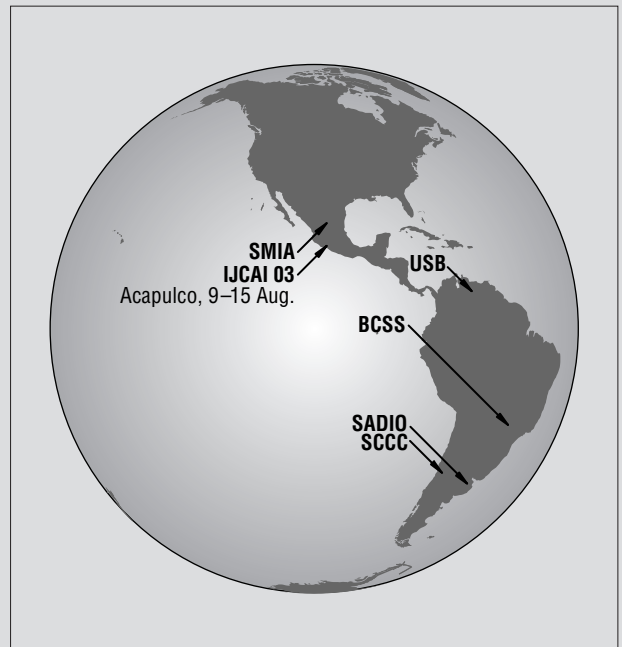
The Center for Artificial Intelligence at ITESM does research and consulting, and supports doctoral, masters, and bachelor programs in artificial intelligence.

[www-csi.mty.itesm.mx](http://www-csi.mty.itesm.mx)

### IJCAI 03

The "Latin American AI conference" will be held in Acapulco, Mexico, 9–15 August 2003.

[www.ijcai-03.org](http://www.ijcai-03.org)



AI in Latin America.

The fourth ASAI was held on 9–13 September 2002 at Santa Fe, Argentina. Iberamia 04 will also meet in Argentina.

The Chilean Society for Computer Science is an active society that has organized the Chilean Computer Science Conference since the early eighties. The AI activity is distributed among Chilean CS researchers, particularly in the areas of logic, automated reasoning, and knowledge representation.

In Venezuela, the Venezuelan Association for Artificial Intelligence (AVINTIA) once organized AI activities, such as Iberamia 94. Now, the AI group at Simon Bolivar University in Caracas coordinates such efforts.

These national conferences accept papers in English, Spanish, or Portuguese. LNAI typically publishes the papers in English,

whereas a national editor publishes the papers in Spanish or Portuguese.

### AI in Mexico

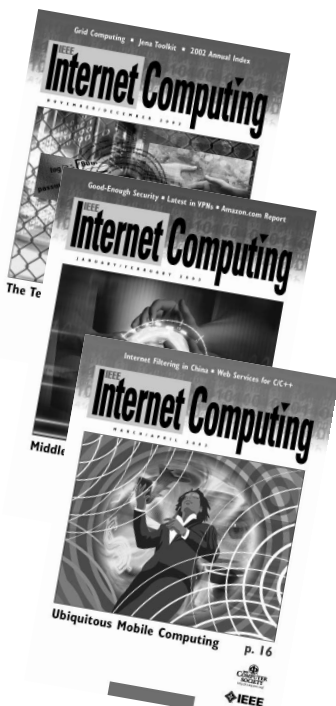
The Mexican Society for Artificial Intelligence (SMIA) was established in 1986, even before the establishment of the Mexican Computer Science Society in 1994. You can trace antecedents of AI work back to activity of the Mexican researcher Arturo Rosenblueth, who worked with Norbert Wiener and Julian Bigelow during the forties.

Their work led to the publication of "Behavior, Purpose and Teleology," in the journal *Philosophy of Science* in 1943. This seminal work provided a framework for the study of purpose and a systematic study of communication, control, and statistical

mechanics in animals and machines. It established the field of cybernetics and defined a multidisciplinary and experimental research program that Mexican groups, among others, pursued. The Arturo Rosenblueth Foundation was established during the seventies to offer graduate education in AI in Mexico.

The first digital computer arrived at the National University of Mexico (UNAM) in the late fifties. Researchers at UNAM organized AI seminars with the participation of John McCarthy, Marvin Minsky, Harold MacIntosh, and others as speakers. Lisp and symbolic programming projects started at UNAM as a result of these seminars. UNAM started offering AI graduate courses in the late sixties.

During the seventies, Mexican students



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educated abroad returned to Mexico to start AI research groups. Two examples are Adolfo Guzman and Jesus Figueroa, who studied at MIT and Edinburgh and were supervised by Marvin Minsky and Donald Michie, respectively.

During the eighties, at least 100 AI researchers studied abroad, working in academic institutions such as UNAM, the National Polytechnic Institute (IPN), the Monterrey Institute of Technology (ITESM), and other private and public universities. So, it was natural to form a national AI conference to gather these groups and publish their works.

The first Mexican AI conference, the Mexican Meeting on AI (RNIA), was held in 1983 and organized annually, attracting between 200 and 400 delegates, many of whom were AI graduate students. In 1988, ITESM started the International Symposium on Artificial Intelligence, sponsored by the American Association for Artificial Intelligence, attracting between 200 and 300 delegates annually. In 1998, ITESM hosted the Fourth World Congress on Expert Systems in Mexico City, which attracted around 600 delegates.

In 1999, SMIA and ITESM agreed to merge RNIA and ISAI into a single biennial conference called the Mexican International Conference on Artificial Intelligence. MICAI 2000 was held in Acapulco, with the participation of 700 delegates, many of them local students. MICAI 2002 in Merida, Yucatan, received around 500 attendees, also with a strong participation of local students. MICAI 2004 will take place in Morelia, Mexico.

Since 1983, SMIA has adopted the policy of holding the AI conference in different Mexican cities to help disseminate AI in those regions. Springer's LNAI publishes MICAI proceedings, and a national editor publishes the Spanish papers.

The main institutions in Mexico involved in AI include UNAM, IPN, and ITESM.

IPN offers PhD and masters education in computer science and intelligent systems through its Computing Research Center (CIC), founded in 1996.

ITESM started offering AI graduate courses in the seventies. In the early eighties, it started an AI group that became the Center for Artificial Intelligence in 1989. CAI draws approximately 60 AI researchers, including 20 full-time faculty members, 30 research assistants, and 10 full-time consultants. CAI's areas of research cover knowledge-based systems; neural, genetic, and fuzzy systems; and robotics and computer vision.

Since 1990, CAI has supported undergraduate (with more than 100 computer and engineering students) and graduate (20 PhD students and 60 masters students) AI programs. CAI also provides consulting services for industry in diagnosis, forecasting, and optimization for manufacturing, banking, health, and financial domains. Since its inception, CAI has developed around one hundred intelligent systems applications for Mexican industry, many of which have had important economic benefits. ITESM is the main academic sponsor for IJCAI 03.

**A**I in Latin America is healthy and growing in at least five countries and expanding to other nations. For instance, ITESM's AI graduate programs have graduated students from Bolivia, Peru, and Ecuador, who are returning to their countries to work in universities and companies. AI is a young scientific discipline compared to other sciences. Since its creation in the mid-twentieth century by Alan Turing and various American researchers, it has grown steadily and spread across the world, including LA. This has been facilitated by the sharing of a common type of language and the same culture, but most importantly, by the great scientific challenges posed by AI objectives. ■