



**Area of Impact: Process Optimization**

**Specialty: Databases, design of query languages, web semantics**

In the 21st century, the greatest challenge in computer science is not related to machines or software development. In a technological society like ours, the biggest problem is the vast amount of data generated daily. This data is located in different places and interpreted differently, on top of which people and institutions ignore how to integrate and use them.

The Millennium Nucleus Center CIWS -made up of 13 researchers from different areas of computer science- works every day to provide the public with tools and techniques to give meaning to this data.

How do you store and process data from new astronomical telescopes to be installed in Chile? How do you analyze climate data? How do you publish and display in an optimal way the information given out by public organizations, so necessary for democracy? Domestic and foreign CIWS Millennium Nucleus researchers work to create tools to successfully face these challenges and develop the foundations of a Semantic Web, which will be the web of the future.



MAIN ACHIEVEMENTS

- Creation of a web platform that can detect and carry out position-tracking regarding earthquakes on social networks.

CONTACT INFORMATION

DIRECTOR: **Marcelo Arenas**  
ACTING DIRECTOR: **Pablo Barceló**



Marcelo Arenas



Pablo Barceló



Contact email: **jperez@dcc.uchile.cl**  
Communications email: **marta.apablaza@gmail.com**  
Telephone: **+56 2 2782 0436**  
Web: **www.ciws.cl**

## RESEARCHERS

**Principal Researcher:**  
Marcelo Arenas

**Senior Researcher:**  
Claudio Gutiérrez

**Acting Principal Researcher:**  
Pablo Barceló

**Post doctorate Researcher:**  
Domagoj Vrgoc

**Associate Researchers:**  
Aidan Hogan  
Juan Reutter  
Jorge Pérez

**Junior Researchers:**  
Bárbara Poblete  
Carlos Buil  
Cristian Riveros  
Jorge Baier  
Benjamín Bustos


## RESEARCH TOPICS

- Information management platform for the semantic web.
- Approximation and classification of responses.
- Query languages design for the semantic web.
- Implementation of query languages for the semantic web.
- Structure and content of the semantic web.
- Data mining on social networks.
- Graph databases.
- Transparency of public data

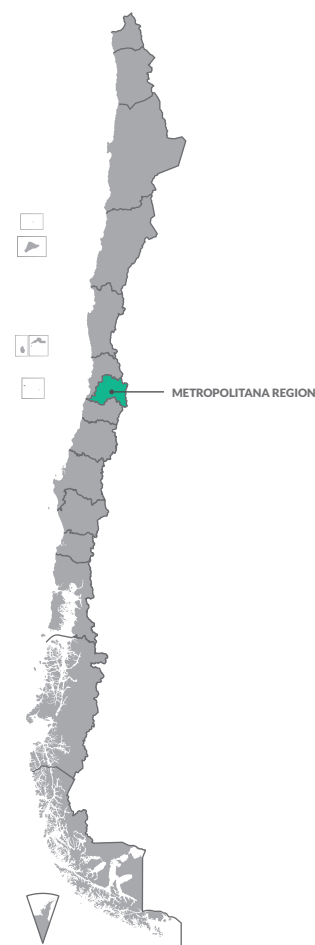
## NOTED OUTREACH ACTIVITIES

- Researchers from the Millennium Nucleus Center CIWS along with the National Seismological Center (CSN) of the University of Chile are working on a prototype that will become a web platform that will use Twitter reports to detect in seconds the occurrence of earthquakes and the area in which people perceived these.
- Work is being done on a web platform together with the National Library where the impact of the news on social networks will be deployed in real time.
- Also, we are working on outreach activities for school-aged children so that they can learn to program and develop computational thinking.

 **PRODUCTIVITY PUBLICATIONS  
(BETWEEN 2014-2015)**  
**PUBLICATIONS: 72**

 **ACTIVE MILLENNIUM NUCLEUS CENTER  
From 2013 to 2016**  
The Millennium Nucleus Centers can be renewed after 3 years, reaching a maximum of 6 years.

 **PRESENCE  
METROPOLITANA REGION**



## HOST INSTITUTIONS:



UNIVERSIDAD  
DE CHILE



PONTIFICIA  
UNIVERSIDAD  
CATÓLICA  
DE CHILE