

# Marlon Pirchiner

Data Scientist (Geophysicist and Mathematician)

## SKILLS

### E-SCIENCE

Information Modeling  
Simulations and Complex Systems  
Machine Learning  
Artificial Intelligence  
Scientific Databases  
Data Stewardship  
Natural Language Processing  
Information Retrieval  
Visualization

### GEOPHYSICS

Computer Physics  
Geological Modeling  
Geospatial Databases  
Quantitative Analysis  
Seismology

### TECHNOLOGY

Databases  
Programming  
Computer Graphics  
Operational Systems  
Unix Tools and Scripting

## CONTACT



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## PRESENTATION

Data is everywhere, coming from many things. Hybrid systems using human and computer analytic methods are improving research and business intelligence continuously. These days the abundance of sensors, communication, storage and processing capacities have opened possibilities for new algorithms and applications which are helping to solve problems in challenging and multifaceted scenarios. Big data, internet of things, linked and semantic data, observation systems and data assimilation, hazard and risk handling, sustainable and smart development, all together, can be out think. From some years of experience supporting financial, academic and research sectors with technology and innovations, it is time to open horizons, to find new collaborations and put this engine to run. If you are looking for someone able to emphatically understand your problem and research a solution by leaning and using state-of-art scientific tools and methods, problem solved, you have just found him.

## PERSPECTIVE

Smart, computer assisted, governance driven by data, simulations, predictions, cognition, inferences and logical reasoning oriented by environmental sustainability, social equity and happiness optimization.

## RESEARCH

### STOCHASTIC MODELING | PROBABILISTIC SEISMIC HAZARD

2014 – 2015 | IAG-USP | São Paulo, SP  
Seismic hazard model development for Brazil.

### DATA MANAGEMENT | SENSORS NETWORK

2010 – 2014 | IAG-USP | São Paulo, SP  
Technology advisory for development of the **Brazilian National Seismic Network - RSBR** and its regional nodes.

## CONFERENCES, PUBLIC PRESENTATIONS

2016	CSIRO-CSS*	Computer Science, Simulation and e-Research, Melbourne, AU.
2015	IUGG	PSHAB: Probabilistic Seismic Hazard Analysis for Brazil.
2014	IASPEI	Smoothed Brazilian Seismicity: application for seismic hazard.
2013	AGU	Zoneless and Mixture proposals for Brazilian seismic hazard.
2012	EGU	Seismological data life cycle for the Brazilian Seismic Network.
2010	AGU	IAGIS: open-source based spatial data infrastructure prototype.
2010	EGU	BRASIS: Brazilian Integrated Seismic Network.

## OTHER INTERESTS

- Human and Social Sciences
- Environmental Diversity
- Music, Culture and Arts

## LANGUAGES

### HIGH LEVEL

Julia, Python, C++, JavaScript,  
C-Sharp, C, Fortran,  
LISP, R, TEX,  
Java, PHP, VB, PL/1

### DATABASES & QUERY

Sparql, X-Path, SQL,  
FileSystems (HDF, NetCDF,  
GDAL/Proj Raster/Vector, CSV/TXT),  
RDBMS (DB2, oracle, postgres,  
mysql/mariadb, sqlite), SQLServer,  
NOSQL/Sci (MongoDB, SciDB),  
Probabilistic, Triple Stores.

### OS & INFRASTRUCTURE

High Platform (IBM/CICS),  
Server, AWS, Cloud, HPC,  
Docker, Linux, Shell, Awk, RegEx,  
Tomcat, Apache, NGINX, git.

## EXPERIENCE

### FOUNDER | PIRCHINER.CO

2015 – Present | Research and Development | Worldwide  
Data and information sciences, predictive and visual analytics supporting smart decisions.

### VOLUNTEER | COMMONWEALTH

#### SCIENTIFIC AND INDUSTRIAL RESEARCH ORGANISATION - CSIRO

2016 | Land and Water | Environmental Information Infrastructure |  
Melbourne, VIC

Achievements:

- ETL tools evaluation for linked data publishing.
- Geographic Information/Geomatics Terminology, ISO TC211: Multilingual glossary of terms published as linked and open data (LOD).
- Geological Time-Scale: LOD query and stratigraphic visualisation prototype.

### R&D CONSULTANT | USP

#### UNIVERSITY OF São PAULO (ACADEMIC)

2010 – 2015 | BRASIS Project, IAG-USP | São Paulo, SP

Responsibilities:

- **Brazilian National Seismographic Network - RSBR** project
- Data management.
- Information technology.
- Sensors (seismic) network.

Achievements:

- Multilateral and collaborative seismicity monitoring.
- Seismological research infrastructure
- Early-warning and alerts capacities.
- Probabilistic seismic hazard analysis using smoothed seismicity.
- Contribution for the South American seismic hazard for the Global Earthquake Model.

### R&D ANALYST | UFRN

#### FEDERAL UNIVERSITY OF RIO GRANDE DO NORTE (ACADEMIC)

2009 – 2010 | Exact and Earth Sciences Center - CCET | Natal, RN

Responsibilities:

- Near real time seismological acquisition and processing system for the **Northeastern Seismic Network - RSISNE**

Achievements:

- Data acquisition and processing system (SeisComp3) setup.
- Seismological data storage and metadata management.
- Technological infrastructure.

### DATA MANAGER | FAPESP

#### SÃO PAULO STATE FOUNDATION FOR RESEARCH SUPPORT (ACADEMIC)

2007 – 2009 | Seismology Center, IAG-USP | São Paulo, SP

Responsibilities:

- Seismological data management.
- Data curation.

Achievements:

- A digital seismological field-sheet metadata system.
- Web portal for Seismological Lab at University of São Paulo.
- 20 years of acquired seismological data curated.
- Data publication at IRIS.edu infrastructure.
- Open source spatial data infrastructure (SDI) for quake catalogs and sensors.

## **INFORMATION SYSTEMS ANALYST | SOCOPA**

**PAULISTA BROKER SOCIETY (FINANCIAL)**

2004 – 2007 | São Paulo, SP

Responsibilities:

- Information infrastructure. Persistence, dissemination, operations for Home-Broker trading.
- Project, databases, standalone, web and mobile development.
- Internal and external client support.

Achievements:

- Home-Broker platform.
- Problem solving.
- IT infrastructure.

## **SOFTWARE ANALYST | ABN-AMRO GROUP**

**ALGEMENE BANK NEDERLAND - AMSTERDAMSCH AND  
ROTTERDAMSCH BANK (FINANCIAL)**

2001 – 2002 | São Paulo, SP

Responsibilities:

- Branches and ATM back-ends.
- Development at z/OS high platform.
- Real-time CICS transactions.
- Database (DB/2, Adabas) development.

Achievements:

- Version control system for deployments.
- Training program.

## **IDIOMS**

### **PORTUGUESE**

Native,  
read/write at 99%,  
listen/speak at 98%.

### **SPANISH**

Fluent,  
read/write at 98%,  
listen/speak at 95%

### **ENGLISH**

Good communication skills,  
read/write at 80%,  
listen/speak at 75%.

## **EDUCATION**

### **INFORMATION MODELING M.Sc. APPLIED MATH**

2014 | Rio de Janeiro, RJ

Applied Math School - EMaP

Getúlio Vargas Foundation - FGV-RJ

Achievements:

- Stochastic models, simulations and complex systems.
- Information theory, representation and retrieval.
- Data science, machine learning and predictive models.
- Natural language processing.
- Visual analytic and data visualization.

### **EARTH SCIENCES B.Sc. IN GEOPHYSICS**

2007 | São Paulo, SP

University of São Paulo - USP

Institute of Astronomy, Geophysics and Atmospheric Sciences - IAG

Achievements:

- Analytical and quantitative problem solving.
- Earth-system processes - shallow and solid-Earth geophysics: environmental, hydrology, archaeology, mining, oil&gas.
- Numerical modeling: computational mathematical-physics.

### **DATA PROCESSING TECHNOLOGIST**

1997 | Vitória, ES

Federal Education Institute - IFES

Achievements:

- Programming languages: algorithms, LISP, C.
- Applications: CAD, computer graphics, design, office.
- Operational systems: Unix, DOS/Windows, OS/2.
- Hardware and computer networks.