



PROFILE

I am a data engineer with roughly seven years of experience. I have designed different data models, Artificial Intelligence (AI)/Machine Learning (ML) architectures, as well as web applications for solving problems in the financial, academic, and cybersecurity areas. Recently, I have been researching how AI can enhance Information Security, and I have published several papers at international conferences. I have excellent written and oral communication skills in English. I am proactive, and I can work in teams with people from different cultures.

CONTACT

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MAYRA ALEXANDRA MACAS CARRASCO

EDUCATION

Zhejiang University (China)

September 2017 – Actual

Doctoral Program, College of Computer Science and Technology
Development of Machine Learning (ML) models (in particular using Deep Learning techniques) in the field of Information Security.
Chinese Government Scholarship award
IEEE ComSoc Student Travel Grant for IEEE LatinCom 2020

Universidad de las Fuerzas Armadas (Ecuador) and Universidad Nacional de la Plata (Argentina)

April 2014 – July 2017

Master in Management of Information Systems and Business Intelligence.

Average grade: 9,20/10

Escuela Superior Politécnica de Chimborazo (Ecuador),

October 2006 – July 2011

Computer Systems Engineering, Computer Science and Electronics Faculty.

Average grade: 8,67/10

WORK EXPERIENCE

Self-employed, ML and Data Analysis Consultant

January 2021 – Present

- Overseeing the entire life cycle of an ML project
- Overseeing the entire life cycle of the data
- Quality control of the ML processes
- Project documentation
- Design and Development of Deep Learning Frameworks
- Research and Presentation in Academic Conferences

Tata Consultancy Services Limited, IT Engineer

October 2015 - September 2017

- Senior data analyst in the Datamart team of the Banco de Pichincha Treasury project.
- Working on projects with remote teams (New York, Colombia, Quito).
- Responsible for the requirements gathering process with the client.
- Technical analysis of changes, effort estimation, solution design, development, and unit testing.
- Configuring the Murex platform and the report delivery process.
- Overseeing the Murex Datamart/Reporting architecture and development.
- Working with the QA team to ensure timely defect correction and adequate test coverage.
- Collaborating with the business and testing teams to ensure quality, and compliance with the requirements established by the client.
- Analysis and design of analytical models that meet the customer's needs.
- Data mapping and data warehouse modeling/OLAP Cubes (Oracle 12g).
- Designing and developing intelligent reports.
- Generating activity reports for the projects (following the SCRUM framework).

HOBBIES

Reading
Swimming
Learning about other cultures

ACHIEVEMENTS:

LANGUAGES:

Spanish - Bilingual or native proficiency
English - Complete professional competence
Chinese - Basic competence

RECOGNITIONS AND AWARDS:

Star Team(12-Jul-2016),
TATA Consultancy Services Limited
Star of the Month(21-Apr-2017),
TATA Consultancy Services Limited
CSC Scholarship (17 Agus-2017),
Chinese Government Scholarship
IEEE ComSoc Student Travel Grant for
IEEE LatinCom 2020

ENTERPRISE:

ASOMTV - World Association of Virtual
Tutors (Jul-2013 - present)

Ministerio de Inclusión Económica y Social (MIES), Senior Analyst of Database

July 2014 – September 2015

- Coordinating the Database division of the Data Management department of the Vice Ministry of Non-Contributory Assurance and Social Mobility (VAMS-Subsection of MIES) with different divisions in the MIES at national level under the direction of the head of the department.
- Managing a working team of five
- Planning and allocating team activities (following the agile methodologies).
- Controlling and following up on assigned activities in order to enhance team productivity.
- Managing the Institutional databases (Microsoft SQL Server and Oracle 10g) of the Vice Ministry of Non-Contributory Assurance and Social Mobility (VAMS-Subsection of MIES).
- Analysis and design of OLAP information cubes in the Business Intelligence tools (SQL Server Business Intelligence, QlikView) to analyze institutional information to make decisions.
- Analysis and design of the institutional BI Data Warehouse.
- VAMS Report Server Administration.
- Preparation, planning, and execution of database projects at national level.
- Preparing execution reports for the unit's annual technology management plan (including training the team about the state-of-the-art tools related to management data).
- Generating proposals for improvements: methodology, documentation, management, and formalization of processes corresponding to the database division.

Ministerio de Inclusión Económica y Social (MIES), IT Analyst

November 2012 – June 2014

- Administration, development, and maintenance of government information systems such as Solidarity Network Protection, and Credit Human Development.
- Database programming and administration (relational and non-relational)
- Web services design and development (.Net and Java) for the exchange of information between governmental organizations.
- Development of documentation standards for procedures in the Data Management department.

SETECOMPU Group, IT Analyst

November 2011 – October 2012

- Analysis, design, and development of web applications for enterprises in the academic and financial areas (e.g., Alliance Française - Equateur).
- Database programming, administration, and optimization (Microsoft SQL Server).
- Business requirements surveys and process design for presenting the right solution that meets a particular client's needs.
- Design and execution of improvement plans for existing software.
- Development of documentation standards for (internal/external) enterprise processes.

Escuela Superior Politécnica de Chimborazo, IT Analyst (Internship)

March 2010 – July 2011

- Designing and developing a registration system for the Language area of ESPOCH, responsible for realizing translation transactions to different languages (e.g., English, French and Portuguese)

- Database (SQL Server) and Data Transformation Services (DTS) programming.
- Creating reports (SQL Server Reporting Services) that enable management to make decisions and control translation transactions.
- Developing web services (.NET) for data integration across different areas of the Institution.
- Generating reports regarding the planning and progress of the project according to the SCRUM framework.
- System implementation and software maintenance.

TECHNICAL EXPERTISE

Theoretical Background

- Data Migration and Integration
- Data Mining
- Business Statistics
- Data Modeling
- Datawarehouse-Datamart OLAP
- Management Databases
- Knowledge Management
- AI/ML techniques (shallow and deep architectures)
- Software Architecture
- Cloud computing (Microsoft Azure-Cloud Computing Services, AWS)
- Edge Computing
- Data curation techniques
- Blockchain
- Continuous integration and continuous delivery
- Agile methodologies

Programming Languages

.NET, Java, C++, Python, R, Microsoft Azure

Machine Learning/AI frameworks

TensorFlow, Keras

Databases

Oracle Database, Microsoft SQL Server, MySql, MongoDB

Distributed data processing engine

Apache Spark

Business intelligence tools

Tableau, QlikView, Oracle BI, SQL Server Reporting Services (SSRS)

Operating Systems

Windows, Linux

Agile methodologies

SCRUM framework

Agile project management tool

Jira Software

TECHNICAL TRAINING

- Enterprise Project Management, 50 hours, Innovativa-ESPE, Issued date: Dec. 2013.
- SQL Server Administration, 20 hours, CETEC-Ecuador, Issued date: Oct. 2014.

- Data Mining, Universidad de la plata (Argentina), 24 hours, Issued date: Sep. 2015.
- November 2015 – December 2015 and October 2016 – December 2016 *MUREX (financial software)* training was held in the office of MUREX company located at 810 Seventh Avenue Floor 14 New York, NY 10019 – USA.
- *R Programming*, Coursera Course Certificates (Credential identifier Credential ID CRP5E53565EF). Issued date: Mar. 2016 No expiration date.
- *The Data Scientist's Toolbox*, Coursera Course Certificates (Credential identifier Credential ID VYB65HR5MMQW). Issued date: Mar. 2016 No expiration date.
- Introduction to Software Product Management, Coursera Course Certificates (Credential identifier Credential ID CRP5E53565EF) Issued date: May. 2017 No expiration date.
- Neural Networks and Deep Learning, Coursera Course Certificates (Credential identifier Credential ID KWNPZDJG6SM7). Issued date: Oct. 2018 No expiration date.

PUBLICATIONS

- M. Macas et al., Data Mining model in the discovery of trends and patterns of intruder attacks on the data network as a public-sector innovation. In 2017 Fourth International Conference on eDemocracy & eGovernment (ICEDEG) (pp. 55-62). IEEE.
- M. Macas, C. Wu, Enhanced Cyber-Physical Security through Deep Learning Techniques, in Proceedings of the Cyber-Physical Systems PhD Workshop 2019, CPS Summer School "Designing Cyber-Physical Systems - From concepts to implementation", Algero, Italy.
- M. Macas, C. Wu, An Unsupervised Framework for Anomaly Detection in a Water Treatment System. In 2019 18th IEEE International Conference on Machine Learning and Applications (ICMLA) (pp. 1298-1305). IEEE.
- M. Macas and C. Wu, "Review: Deep Learning Methods for Cybersecurity and Intrusion Detection Systems," *2020 IEEE Latin-American Conference on Communications (LATINCOM)*, Santo Domingo, 2020, pp. 1-6, doi: 10.1109/LATINCOM50620.2020.9282324.