

Andrès Xavier RUBIO PROAÑO

アンドレス サビエル ルビオ プロアーニョ

PhD in Computer Science · HPC · AI · Computer Architecture

PhD researcher and university lecturer with experience across Ecuador, France, and Japan, specializing in high-performance computing, heterogeneous memory systems, and artificial intelligence.

+593979378663 | andresrubiop@msn.com | Quito, Ecuador

Google Scholar | ORCID 0000-0003-1270-9140 | LinkedIn



EDUCATION

Bordeaux,
Nouvelle-Aquitaine,
France
10.2018 – 10.2021

PhD in Computer Science Université de Bordeaux

Thesis: Data Placement Strategies for Heterogeneous and Non-Volatile Memories in HPC
Thesis Director: Brice GOGLIN
Ecuador Recognition Credential number: 2501228744

Barcelona, Catalonia,
Spain
09.2016 – 03.2018

Master's Degree in Computer Engineering Universitat Autònoma de Barcelona

Final Project: Development of a Non-Invasive Hybrid-Based Message Logger using RADIC Architecture in Open MPI
Director: Dolores REXACHS
Ecuador Recognition Credential number: 7241199061

Quito, Pichincha,
Ecuador
01.2008 – 12.2015

Eng. in Electronics & Networks Escuela Politécnica Nacional

Final Project: Development of a module that implements the functionalities of the RTPS protocol to be used in real-time distributed applications
Director: Xavier CALDERON
Ecuador Recognition Credential number: 1001-16-1440799

PROFESSIONAL, RESEARCH & ACADEMIC EXPERIENCE

Samorondón, Guayas,
Ecuador
07.2025 –

Invited Professor Universidad de Especialidades Espíritu Santo (UEES)

Natural Language Processing @ Master's Degree in Artificial Intelligence

Online, Japan
07.2024 –

Research Fellow National Research and Development Institute RIKEN Center for Computational Science (R-CCS)

Research on accelerating the training of surrogate models using deep learning

Quito, Pichincha,
Ecuador
04.2024 –

Associate Professor Indoamérica Technological University (UTI) Faculty of Engineering (FING) / Mechatronics and Interactive Systems Research Centre (MIST)

Computer Architecture, High Performance Computing, Artificial Intelligence
Introduction to Operating Systems @ Information Technology Engineering
Operating Systems Administration @ Information Technology Engineering
Computer Architecture @ Information Technology Engineering
Structured Programming @ Industrial Engineering
Machine Learning @ Master's Degree in Robotics and Interactive Systems
Data Science @ Information Technology Engineering
Acting Coordinator, Information Technology Engineering programme, 09.2024 – 10.2024
Acting Coordinator, Master's in Big Data and Data Science, 09.2024 – 10.2024
Acting Coordinator, Master's in Cybersecurity, 09.2024 – 10.2024

Quito, Pichincha,
Ecuador
06.2024 –

Invited Professor

Universidad Iberoamericana (UNIBE)

Machine Learning @ Big Data Master's Degree (seasonal sessions: 06.2024 – 07.2024; 09.2024 – 10.2024; 05.2025 – 06.2025)

Kobe, Hyōgo, Japan
11.2021 – 03.2024

Postdoctoral Researcher

National Research and Development Institute RIKEN

Center for Computational Science (R-CCS)

Research on heterogeneous memory systems, including DRAM and NVM

Accelerating the training of surrogate models using deep learning

Participation in the technical feasibility study for the next FugakuNEXT supercomputer

Bordeaux,
Nouvelle-Aquitaine,
France
10.2018 – 10.2021

PhD Researcher

National Institute for Research in Computer Science and Automation (INRIA)

Topology-aware system-scale data management for high-performance computing Team (TADAAM)

Research on performance, reliable and productive frameworks for heterogeneous memory systems, including NVM, DRAM and HBM

Bordeaux,
Nouvelle-Aquitaine,
France
03.2020 – 12.2021

Instructor

Bordeaux Institute of Technology (Bordeaux INP)

ENSEIRB-MATMECA

Practical sessions of the System Programming course (seasonal sessions: 03.2020 – 12.2020; 03.2021 – 12.2021)

Washington, D.C.,
District of Columbia,
United States
06.2017 – 08.2017

Regular Summer Intern

Inter-American Development Bank

Fiscal & Municipal Dev Principal Spec., IFD/FMM

Literature review on technologies applied in the fiscal sector, including blockchain, big data, machine learning and the shared economy

Remote
04.2016 – 12.2016

Hardware Engineer

Sinnply Blue

Design and development of prototypes using BLE and Arduino boards

Quito, Pichincha,
Ecuador
09.2014 – 08.2015

Technical Research Assistant

Ecuadorian Corporation for the Development of Research and Academia (CEDIA)

Technical assistance in the CEPRA VIII-2014-06 project: Real-Time Middleware Based on the Publish/Subscribe model

Quito, Pichincha,
Ecuador
03.2014 – 05.2014

Android Developer

Hortaleg La Huerta S.A.

Development of an Android application that supervises a network of sensors for crops

PUBLICATIONS

1. Carmen Godínez-Oliva, Luis Pusey-Alvarado, Nelson Díaz-Álvarez, Andrès Rubio Proaño, and Janio Jadán-Guerrero. Enhancing decision-making through human-ai synergy in smarter and fairer recruitment. In Human Interface and the Management of Information: Thematic Area, HIMI 2026, Held as Part of the 28th HCI International Conference, HCII 2026, Montreal, QC, Canada, July 26–31, 2026, Proceedings, Part II, pages 269–280. Springer Nature, 2026. doi:10.1007/978-3-032-29178-3_17.
2. Hugo Arias-Flores, Mario Piedra-Ansatuña, Mireya Zapata, Andrès Rubio Proaño, and Andrés Palacio-Fierro. Low-cost interfaces and technological accessibility: A human-computer interaction approach for the inclusion of individuals with motor disabilities. In Universal Access in Human-Computer Interaction: 20th International Conference, UAHCI 2026, Held as Part of the 28th HCI International Conference, HCII 2026, Montreal, QC, Canada, July 26–31, 2026, Proceedings, Part I, page 3. Springer Nature, 2026. doi:10.1007/978-3-032-29653-5_1.
3. Amarjit Singh, Kento Sato, Kohei Yoshida, Kentaro Uesugi, Yasumasa Joti, Takaki Hatsui, and Andrès Rubio Proaño. Roix-comp: Optimizing x-ray computed tomography imaging strategy for data reduction

and reconstruction. In Proceedings of the Supercomputing Asia and International Conference on High Performance Computing in Asia Pacific Region, SCA/HPCAsia '26, page 351–361, New York, NY, USA, 2026. Association for Computing Machinery. doi:10.1145/3773656.3773665.

4. Joel Segura, Andrés Rubio Proaño, and David Chapi. Design of a backup system powered by renewable energy sources for the operation of a textile industry in qito. IET Conference Proceedings, 2025:90–94, 2025. URL: <https://digital-library.theiet.org/doi/abs/10.1049/icp.2025.1250>, doi:10.1049/icp.2025.1250.
5. Andrés Rubio Proaño and Kento Sato. Understanding power consumption metric on heterogeneous memory systems. In 2023 IEEE 29th International Conference on Parallel and Distributed Systems (ICPADS), pages 2859–2862, 2023. doi:10.1109/ICPADS60453.2023.00408.
6. Clément Foyer, Brice Goglin, and Andrés Rubio Proaño. A survey of software techniques to emulate heterogeneous memory systems in high-performance computing. Parallel Computing, 116:103023, 2023. doi:10.1016/j.parco.2023.103023.
7. Brice Goglin and Andrés Rubio Proaño. Using performance attributes for managing heterogeneous memory in hpc applications. In 2022 IEEE International Parallel and Distributed Processing Symposium Workshops (IPDPSW), pages 890–899. IEEE, 2022. doi:10.1109/IPDPSW55747.2022.00145.
8. Andrés Rubio Proaño. Exposer les caractéristiques des architectures à mémoires hétérogènes aux applications parallèles. In COMPAS 2020–Conférence francophone d’informatique en Parallélisme, Architecture et Système, 2020. URL: <https://hal.science/hal-02639607>.
9. Edgar A León, Brice Goglin, and Andrés Rubio Proaño. M&mms: navigating complex memory spaces with hwloc. In Proceedings of the International Symposium on Memory Systems, pages 149–155, 2019. doi:10.1145/3357526.3357546.
10. Brice Goglin and Andrés Rubio Proaño. Opportunities for partitioning non-volatile memory dimms between co-scheduled jobs on hpc nodes. In European Conference on Parallel Processing, pages 82–94. Springer, 2019. doi:10.1007/978-3-030-48340-1_7.

INTERNSHIPS

Quito, Pichincha,
Ecuador
07.2011 – 08.2011

Intern
IRS
LDAP configuration for users

COURSES

Loja, Loja, Ecuador
24.11.2014 –
28.11.2014
40h

Técnicas Avanzadas de Middleware
CEDIA & UTPL

Washington, D.C.,
District of Columbia,
United States
03.08.2017
10h

2017 Summer Internship Innovation Experience
cocolab & IDB
Summer Internship Innovation Experience 2017

Bordeaux,
Nouvelle-Aquitaine,
France
03.12.2018
40h

Français Langue Etrangère/DOCTOFLE/French courses for PhD
Université de Bordeaux
French as a foreign language for PhD students

Online
17.01.2019
15h

Research Integrity in Scientific Professions
France Université Numérique
Research integrity in scientific professions

Bordeaux, Nouvelle-Aquitaine, France 12.03.2019 – 14.03.2019 6h	Introduction to statistic tests Université de Bordeaux Introduction to statistical tests
Bordeaux, Nouvelle-Aquitaine, France 12.03.2019 – 14.03.2019 18h	Calcul Parallèle avec les ressources de calcul du Mésocentre de Calcul Intensif Aquitain Université de Bordeaux Parallel computing with the computing resources of the Aquitaine high-performance computing centre
Bordeaux, Nouvelle-Aquitaine, France 20.05.2019 12h	Droit du numérique: logiciels et données à caractère personnel Université de Bordeaux Digital law: software and personal data
Fiuggi, Italy 14.07.2019 – 19.07.2019 27h	Fifteenth International Summer School on Advanced Computer Architecture and Compilation for High-Performance and Embedded Systems (ACACES2019) HiPEAC & Ghent University Fifteenth International Summer School on Advanced Computer Architecture and Compilation for High-Performance and Embedded Systems: distributed-memory programming and algorithms; memory technology and architecture; memory systems for the heterogeneous era; reconfigurable multiprocessor systems-on-chip
Bordeaux, Nouvelle-Aquitaine, France 12.02.2020 12h	Introduction to modeling, simulation and data science in oncology Université de Bordeaux Introduction to modelling, simulation and data science in oncology
Online 06.07.2020 – 17.07.2020 10h	Sixteenth International Summer School on Advanced Computer Architecture and Compilation for High-Performance and Embedded Systems (ACACES2020) HiPEAC Sixteenth International Summer School on Advanced Computer Architecture and Compilation for High-Performance and Embedded Systems: networks-on-chip and RISC-V from open ISA to open architecture and open hardware
Bordeaux, Nouvelle-Aquitaine, France 12.01.2021 9h	Réalités Mixtes: Immersion et interaction dans les environnements physico-numériques Université de Bordeaux Mixed realities: immersion and interaction in physical-digital environments
Bordeaux, Nouvelle-Aquitaine, France 01.01.2021 6h	Sensibilisation à l'écologie et à l'impact du numérique Université de Bordeaux Awareness of ecology and the impact of digital technology
Bordeaux, Nouvelle-Aquitaine, France 08.06.2021 10h	Theory of Machine Learning Université de Bordeaux Theory of machine learning
Bordeaux, Nouvelle-Aquitaine, France 21.06.2021 10h	Introduction to Reinforcement Learning Université de Bordeaux Introduction to reinforcement learning

Quito, Pichincha,
Ecuador
08.10.2024
60h

Scientific Research
SCImago
Scientific Research Training 2024

Quito, Pichincha,
Ecuador
19.06.2025
40h

Specialized Training in Intellectual Property
CEDIA
Specialized Training in Intellectual Property

CREDENTIALS

Italy
15.06.2026

EU-CELAC delegate sponsored by the European Commission for a technical visit to the AREA Science Park in Trieste to exchange knowledge on research infrastructures
European Commission

United States
29.09.2025

SIGHPC Early Career Travel Grant for attending SC25
SIGHPC-ACM

Quito, Ecuador
11.07.2022 –
11.07.2027

Ecuadorian Researcher Accreditation
Secretaría de Educación Superior, Ciencia, Tecnología e Innovación (SENESCYT)
Assistant Researcher 1, 11.07.2022 – 15.08.2023
Assistant Researcher 2, 15.08.2023 – 11.07.2027

27.02.2024

Member
Association for Computing Machinery (ACM)
Membership: 8102176

TALKS

Remote
2024
Invited

Performance metrics for managing memory in supercomputers
Universidad de Cuenca

Remote
2023
Invited

Heterogeneous Memory Systems
Yachay Tech

Remote
2023
Invited

Performance metrics for managing heterogeneous memory in HPC applications
ADAC Seminar

Remote
2023
Invited

Power-performance analysis on heterogeneous memory systems
R-CCS Café

Paris, Île-de-France,
France
2023

Identifying suitable storage targets for surrogate model training on heterogeneous storage infrastructures
CEA-RIKEN Workshop 2023-1

Kobe, Hyōgo, Japan
2022

Accelerating convergence of simulation and AI with hierarchical memory/storage systems
CEA-RIKEN Workshop 2022-1

Remote 2022	Using performance attributes for managing heterogeneous memory in HPC PDSEC – IPDPS22
Remote 2022	Determining criteria for data allocation in heterogeneous memory systems for HPC applications The 4th R-CCS International Symposium
Remote 2021	Exposing the characteristics of heterogeneous memory architectures to parallel applications JLESC 2021
Göttingen, Lower Saxony, Germany 2019	Opportunities for partitioning non-volatile memory DIMMs between co-scheduled jobs on HPC nodes Coloc – Euro-Par 2019
Bordeaux, Nouvelle-Aquitaine, France 2019	NVRAM, NVDIMM, NVMe, DAX: What? How? Inria

REVIEWER

11.2026	SC26 Artifact Description / Artifact Evaluation reproducibility committee
07.2026 –	TICEC 2026 Reviewer
03.2026 –	SBAC-PAD 2026 Reviewer
11.2025	SC25 Artifact Description / Artifact Evaluation reproducibility committee and posters committee
12.2023	CEA-RIKEN HPC School 2023 Lecture on AI frameworks on Fugaku
11.2024	SC24 Artifact Description / Artifact Evaluation reproducibility committee
08.2023	ICPP 2023 Paper reviewer
11.2023	SC23 BoF reviewer
09.2022	IEEE Cluster 2022 Paper reviewer

POSTERS

Kobe, Hyōgo, Japan
2024

Power consumption in heterogeneous memory systems
The 6th R-CCS International Symposium

Hainan, China
2023

Understanding the power consumption metric in heterogeneous memory systems
The 29th IEEE International Conference on Parallel and Distributed Systems 2023

Bordeaux,
Nouvelle-Aquitaine,
France
2023

Memory consumption in heterogeneous memory systems
JLESC 15th

Kobe, Hyōgo, Japan
2023

Power consumption metric in heterogeneous memory systems
The 5th R-CCS International Symposium

Washington, D.C.,
District of Columbia,
United States
2019

M&MMs: Navigating complex memory spaces with hwloc
R-CCS Café

PROJECTS

2025 –

In-situ techniques for training surrogate models
Member · UTI, RIKEN

2025 –

Development of an Ecuadorian sign language interpretation system based on artificial intelligence to improve communication for deaf people in Ecuador
Member · UTI, CEDIA, EPN, UPS, PUCE

2022 – 2023

Accelerating surrogate modelling training process
Member · RIKEN and CEA

2021

Heuristics for heterogeneous memory (H2M)
Member · INRIA and RWTH Aachen University

2014 – 2015

Real-time middleware based on the publish/subscribe model
Member · Escuela Politécnica Nacional, Universidad Técnica Particular de Loja and Universidad Politécnica Salesiana

LANGUAGES

Native	Spanish
Advanced	English
Advanced	French
Intermediate	Catalan
Beginner	Japanese

REFERENCES

Xavier CALDERÓN

Escuela Politécnica Nacional (EPN)
Full Professor
xavier.calderon@epn.edu.ec

Brice GOGLIN

Institut National de Recherche en
Informatique et en Automatique (Inria)
Research Director
brice.goglin@inria.fr

Kento SATO 佐藤 賢斗

National Research and Development
Institute RIKEN (理研)
Team Leader
kento.sato@riken.jp