

Andrès RUBIO PROAÑO

Personal data

👤 Name: Andrès Xavier RUBIO
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🏠 Address: La Rivera, Conocoto, Quito,

📖 Place of birth: Quito, Ecuador

📅 Date of birth: 24-11-1989



Education

Université de Bordeaux Bordeaux, France
PhD in Computer Science 10.2018 – 10.2021
thesis: *Data Placement Strategies for Heterogeneous and Non-Volatile Memories in HPC*
Thesis Director: Brice GOGLIN
Ecuador Recognition Credential number: 2501228744

Universitat Autònoma de Barcelona Barcelona, Spain
Master's Degree in Computer Engineering 09.2016 – 03.2018
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

Escuela Politécnica Nacional Quito, Ecuador
Eng. in Electronics & Networks 01.2008 – 12.2015
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

Colegio Técnico Aeronáutico de Aviación Civil Quito, Ecuador
High School Diploma 09.2001 – 07.2007
Ecuador Recognition Credential number: 225433

Professional, Research & Academic Experience

Research Fellow @ Institute of Physical and Chemical Research (RIKEN) Online, Japan
Accelerating Training in Surrogate Models using Deep Learning Research 07.2024 –

Researcher @ Centro de investigación en Mecatrónica y Sistemas Interactivos (MIST) de la Universidad Indoamérica (UTI) Quito, Ecuador
Computer Architecture, High Performance Computing, Artificial Intelligence 02.2025 –

Associate Professor @ Universidad Indoamérica (UTI) Quito, Ecuador
Introduction of Operative Systems @ Bachelor of Science in Information Technology 10.2024 –
Operating Systems Administration Class @ Bachelor of Science in Information Technology
Computer Architecture Class @ Bachelor of Science in Information Technology
Structured Programming Class @ Bachelor of Science in Industrial Engineering

Adjunct Professor @ Universidad Indoamérica (UTI) Quito, Ecuador
Maths Class @ Bachelor of Science in Information Technology 04.2024 - 09.2024
Computer Architecture Class @ Bachelor of Science in Information Technology
Object Oriented Programming Class @ Bachelor of Science in Information Technology
Introduction to Networks Class @ Bachelor of Science in Information Technology
Structured Programming Class @ Bachelor of Science in Industrial Engineering

Invited Professor @ Universidad Iberoamericana (UNIBE)

Machine Learning Class @ Big Data Master's Degree

Quito, Ecuador

06.2024 - 07.2024

09.2024 - 10.2024

05.2025 - 06.2025

Postdoctoral Researcher @ Institute of Physical and Chemical Research (RIKEN)

Heterogeneous Memory Systems Research including DRAM and NVM
Accelerating Training in Surrogate Models using Deep Learning Research
Participation on the technical feasibility study for the next supercomputer FugakuNEXT

Kobe, Japan

11.2021 - 03.2024

PhD Researcher @ Institut National de Recherche en Informatique et en Automatique (INRIA)

Research related to performance, reliable and productive frameworks for Heterogeneous Memory Systems including NVM, DRAM and HBM

Bordeaux, France

10.2018 - 10.2021

Instructor @ Institut Polytechnique de Bordeaux (Bordeaux INP)

Practical sessions of System Programming class

Bordeaux, France

03.2020 - 12.2020

Instructor @ Institut Polytechnique de Bordeaux (Bordeaux INP)

Practical sessions of System Programming class

Bordeaux, France

03.2021 - 12.2021

Emerging Technologies Specialist @ Wiibiq

Research emerging technologies such as AI, ML, blockchain, IoT, and digital twins to assess their real-world applicability.
Analyze shared economy proposals and their impact on the fiscal sector and sustainable economic models.

Quito, Ecuador

03.2018 - 09.2018

Hardware Engineer @ Sinnply Blue

Design and development of prototypes using: BLEArduino Boards

Remote

04.2016 - 12.2016

Technical Research Assistant @ Corporación Ecuatoriana para el Desarrollo de la Investigación y la Academia (CEDIA)

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

Quito, Ecuador

09.2014 - 08.2015

Android Developer @ Hortaleg La Huerta S.A.

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

Quito, Ecuador

03.2014 - 05.2014

Internships

Regular Summer Intern @ Inter-American Development Bank

Literature review on technologies applied in the fiscal sector including:
Blockchain, Bigdata, Machine Learning and Shared Economies

*Washington D.C.,**United States*

06.2017 - 08.2017

Intern @ IRS

LDAP configuration for users

Quito, Ecuador

07.2011 - 08.2011

Courses

Técnicas Avanzadas de Middleware @ CEDIA & UTPL*Loja, Ecuador*

24.11.2014-

28.11/2014

40h

2017 Summer Internship Innovation Experience @ cocolab & IDB*Washington D.C.,**USA*

03.08.2017

10h

Français Langue Etrangère/DOCTOFLE/French courses for PhD @ Université de Bordeaux*Bordeaux, France*

03.12.2018

40h

Research Integrity in Scientific Professions @ France Université Numérique*Online*

01.17.2019

15h

Introduction to statistic tests @ Université de Bordeaux	<i>Bordeaux, France</i> 12.03.2019 – 14.03.2019 6h
Calcul Parallèle avec les ressources de calcul du Mésosentre de Calcul Intensif Aquitain @ Université de Bordeaux	<i>Bordeaux, France</i> 12.03.2019 – 14.03.2019 18h
Droit du numérique: logiciels et données à caractère personnel @ Université de Bordeaux	<i>Bordeaux, France</i> 20.05.2019 12h
Fifteenth International Summer School on Advanced Computer Architecture and Compilation for High-Performance and Embedded Systems (ACACES2019) @HiPEAC & Ghent University	<i>Fuggi, Italy</i> 14.07.2019 – 19.07.2019 27h
Introduction to modeling, simulation and data science in oncology @ Université de Bordeaux	<i>Bordeaux, France</i> 12.02.2020 12h
Sixteenth International Summer School on Advanced Computer Architecture and Compilation for High-Performance and Embedded Systems (ACACES2020) @HiPEAC & Ghent University	<i>Online</i> 06.07.2020 – 17.07.2020 10h
Réalités Mixtes: Immersion et interaction dans des environnements physico-numériques @ Université de Bordeaux	<i>Bordeaux, France</i> 12.01.2021 9h
Sensibilisation à l'écologie et à l'impact du numérique @ Université de Bordeaux	<i>Bordeaux, France</i> 01.01.2021 6h
Theory of Machine Learning @ Université de Bordeaux	<i>Bordeaux, France</i> 08.06.2021 10h
Introduction to Reinforcement Learning @ Université de Bordeaux	<i>Bordeaux, France</i> 21.06.2021 10h

Credentials

Ecuadorian Researcher Licence @ Secretaría de Educación Superior, Ciencia, Tecnología e Innovación (SENESCYT)	<i>Quito, Ecuador</i> 11.07.2022 – 11.07.2027
Member @ Association for Computing Machinery(ACM)	27.02.2024

Publications

1. Andrès 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.
2. Clément Foyer, Brice Goglin, and Andrès Rubio Proaño. A survey of software techniques to emulate heterogeneous memory systems in high-performance computing. page 103023. Elsevier, 2023.

3. Brice Goglin and Andrès 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.
4. Andrès 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.
5. Edgar A León, Brice Goglin, and Andrès Rubio Proaño. M&mms: navigating complex memory spaces with hwloc. In *Proceedings of the International Symposium on Memory Systems*, pages 149–155, 2019.
6. Brice Goglin and Andrès 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.

talks

Métricas de Rendimiento para gestionar la memoria en superordenadores @ Universidad de Cuenca	2024 Remote Invited
Heterogeneous Memory Systems @ Yachay Tech	2023 Remote Invited
Performance Metrics for Managing Heterogeneous Memory in HPC Applications @ ADAC Seminar	2023 Remote Invited
Analysing Power Performance on Heterogeneous Memory Systems @ R-CCS Café	2023 Remote Invited
Identifying Suitable Storage Targets for Surrogate Model Training on Heterogeneous Storage Infrastructures @ CEA-RIKEN Workshop 2023-1	2023 Paris, France
Accelerating Convergence of Simulation and AI with Hierarchical Memory/Storage Systems @ CEA-RIKEN Workshop 2022-1	2022 Kobe, Japan
Using Performance Attributes for Managing Heterogeneous Memory in HPC @ PDSEC - IPDPS22	2022 Remote
Determining Criteria for Data Allocation in Heterogeneous Memory Systems for HPC Applications @ The 4th R-CCS International Symposium	2022 Remote
Exposing the Characteristics of Heterogeneous Memory Architectures to Parallel Applications @ JLESC 2021	2021 Remote
Opportunities for Partitioning Non-Volatile Memory DIMMs between Co-Scheduled Jobs on HPC Nodes @ Coloc - Euro-Par 2019	2019 Gottingen, Germany
NVRAM, NVDIMM, NVMe, DAX: What? How? @ Inria	2019 Bordeaux, France

Reviewer

CEA-RIKEN HPC School 2023 Lecture on AI frameworks on Fugaku	12.2023
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SC24 Artifact Description (AD) / Artifact Evaluation (AE) reproducibility committee	11.2024
ICPP2023 Paper's Reviewer	08.2023
SC23 BoF Reviewer	11.2023
IEEE Cluster 2022 Paper's Reviewer	09.2022

posters

Power Consumption on Heterogeneous Memory Systems @ The 6th R-CCS International Symposium	2024 Kobe, Japan
Understanding power consumption metric on heterogeneous memory systems @ The 29th IEEE International Conference on Parallel and Distributed Systems 2023	2023 Hainan, China
Memory Consumption on Heterogeneous Memory Systems @ JLESC 15th	2023 Bordeaux, France
Power Consumption Metric on Heterogeneous Memory Systems @ The 5th R-CCS International Symposium	2023 Kobe, Japan
M&MMs: Navigating Complex Memory Spaces with hwloc @ R-CCS Café	2019 Washington D.C., United States

Projects

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	2025 –
Accelerating Surrogate Modelling training process Member @ RIKEN & CEA	2022 – 2023
Heuristics for Heterogeneous Memory (H2M) Member @ INRIA & RWTH Aachen University	2021 – 2021
Real-time Middleware Based on the Publish / Subscribe Model Member @ Escuela Politécnica Nacional, Universidad Técnica Particular de Loja & Universidad Politécnica Salesiana	2014 – 2015

languages

Inglés	Advanced
Spanish	Native
French	Advanced
Catalan	Intermedio
Japanese	Beginner

References

Xavier CALDERÓN

Escuela Politécnica Nacional (EPN)
Main 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