Jaime Arias

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Personal Information

Given Name: Jaime Eduardo **Last Name:** Arias Almeida **Birth Date:** 15/04/1989 **Citizenship:** Colombian

Research Interests

Formal specification and verification of timed and reactive concurrent systems; interactive multimedia systems.

Experience

- **Research Engineer** at *CNRS, Laboratoire d'Informatique de Paris Nord (LIPN), France.* **2018 - Present**
- **R&D Engineer** at *Inria Grenoble Rhône-Alpes, France.* **2016 - 2018**
- **R&D Engineer** at *Inria Bordeaux Sud-Ouest, France.* **2015 - 2016**

Education

- **Ph.D. in Computer Science** at *Université de Bordeaux, France.* **2012 - 2015**
- **Engineering Degree in Computer Science** at *Universidad Javeriana, Colombia.* **2005 - 2012**
- **Electronics Engineering Degree** at *Universidad Javeriana, Colombia.* **2005 - 2012**

Research Projects (5 Last Years)

- MSH Paris Nord project with Javeriana University (Colombia), SAT (Québec) and Bordeaux (France) – **PI** **2024**
- USPN project with Javeriana University (Colombia), POSTECH (South Korea) and FST (Tunisia) – **PI** **2024**
- PHC Aurora project with the University of Oslo (Norway) – **Member** **2023 – 2024**
- IEA project, CNRS/PAN, with the Polish Academy of Sciences (Poland) – **Member** **2019 – 2023**
- Project funded by CNRS, with the University of Oslo (Norway) – **Member** **2022 – 2022**
- IFD collaborative project with the University of Århus (Denmark) – **Member** **2020 – 2021**

Responsibilities

- **Responsible** of the development committee of the LIPN since January 2023.
- **Responsible** of the development team of the LIPN since February 2021.
- **Member** of the Software and Source Codes College since November 2024.
- **Board** member of the Galilée Doctoral School since July 2021.
- **Ambassador** of Software Heritage since June 2021.
- **Programme Committee** member of *IJCAI2025*, *AAMAS 2024-2025*, *Microservices 2022*, *SLTC 2022* and *15CCC*.
- **Artifact Evaluation** member of *PLDI 2025*, *POPL 2023-2025*, *OOPSLA 2024*, *ICFP 2022-2023*, *FormaliSE 2022-2023*, and *FORMATS 2023*.
- **Tool Award Committee** member of *Petri Nets 2020-2021*.
- **Jury** of the "Applications and Softwares" session of the APSA Challenge - Ethiopia 2018.

Tools

The reader can visit my Git repository (https://bit.ly/gitArias) to see the full list of my developments.

- **ADT2AMAS** (C#): Tool that allows (1) transforming ADTrees into multi-agent systems and (2) computing an optimal schedule with the minimal number of agents. **Demo:** https://bit.ly/demoADT2AMAS
- **CosyDraw** (JS): Web-based graphical interface for the formal specification and verification of dynamic systems. It is the GUI for the CosyVerif platform. **Demo:** https://bit.ly/demoCosyVerif
- **Solidity2CPN** (python, JS): Platform for the formal verification of smart contracts using Coloured Petri Nets.
- **PMC-SOG** (C#): Parallel and distributed model checking using the Symbolic Observation Graph (SOG).
- **SyMoN** (OCaml): Symbolic model checker for a non-deterministic timed concurrent constraint calculus.

Publications

Author of 27 conference papers and 4 journal papers. The reader can find all my publications on HAL (https://bit.ly/halArias).

1. J. Arias, K. Bae, C. Olarte, P. C. Ölveczky, and L. Petrucci. A rewriting-logic-with-SMT-based formal analysis and parameter synthesis framework for parametric time Petri nets. *Fundam. Informaticae*, 192(3-4):261–312, 2024.
2. J. Arias, K. Bae, C. Olarte, P. C. Ölveczky, L. Petrucci, and F. Rømming. Symbolic analysis and parameter synthesis for networks of parametric timed automata with global variables using maude and smt solving. *Sci. Comput. Program.*, 233:103074, 2024.
3. J. Arias, C. Olarte, L. Petrucci, L. M. sko, W. Penczek, and T. Sidoruk. Optimal scheduling of agents in ADTrees: Specialized algorithm and declarative models. *IEEE Trans. Reliab.*, 73(2):861–875, 2024.
4. Étienne André, J. Arias, B. Barbot, F. Hulin-Hubard, F. Kordon, V.-F. Le, and L. Petrucci. CosyVerif: the path to formalisms cohabitation. In *Petri Nets*, volume 14628 of *LNCS*, pages 432–444. Springer, 2024.
5. J. Arias, W. Jamroga, W. Penczek, L. Petrucci, and T. Sidoruk. Strategic (timed) computation tree logic. In *AAMAS 2023*, pages 382–390. ACM, 2023.