

# Curriculum vitae

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## Personal information

- **Name and surname:** Mallku Ernesto Soldevila Raffa
  - **E-mail:** mallkuernesto@gmail.com
  - **Personal web page:** mallku2.github.io
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## Academic background

- **Post-doctorate in Computer Science** **Córdoba, Argentina**  
2021 – present  
*Facultad de Matemática, Astronomía, Física y Computación, UNC*
    - Research topic: *Tools for improving the construction of trustable models of computation for programming languages.*
    - Advisors: Dr. Carlos Areces and Dr. Beta Ziliani.
  - **Doctorate in Computer Science** **Córdoba, Argentina**  
2015 – 2020  
*Facultad de Matemática, Astronomía, Física y Computación, UNC*
    - Thesis title: *Operational semantics and its application to the study of garbage collection, in Lua 5.2.*
    - Advisors: Dr. Daniel Fridlender and Dr. Beta Ziliani.
  - **Licenciatura en Ciencias de la Computación (BCs (3 years) and MSc (2 years) in Computer Science)** **Córdoba, Argentina**  
2007 – 2015  
*At Facultad de Matemática, Astronomía, Física y Computación, UNC.*
    - Grade average (on a 10-point scale): 9.04
  - **Information Systems Engineering** **Córdoba, Argentina**  
2005 – 2006  
*UTN, Facultad Regional Córdoba*
    - Studied up to the second year.
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## Publications

- Peer-reviewed:
    - Araceli Acosta and Mallku Soldevila. **Percepción de estudiantes sobre la carrera de Analista en Computación en la UNC** (spanish). In *Memorias del Simposio Argentino de Educación en Informática*, Vol. 9 Núm. 9 (2023).
    - Mallku Soldevila, Beta Ziliani and Bruno Silvestre. **From specification to testing: semantics engineering for Lua 5.2.** In *Journal of Automated Reasoning*, August, 2022.
    - Mallku Soldevila, Beta Ziliani and Daniel Fridlender. **Understanding Lua's garbage collection: Towards a formalized static analyzer.** In *Proceedings of the 22nd International Symposium on Principles and Practice of Declarative Programming*, PPDP'20, 2020.
    - Mallku Soldevila, Beta Ziliani, Bruno Silvestre, Daniel Fridlender and Fabio Mascarenhas. **Decoding Lua: Formal semantics for the developer and the semanticist.** In *Proceedings of the 13th ACM SIGPLAN Dynamic Languages Symposium*, DLS'17, 2017.
  - In pre-print:
    - Mallku Soldevila, Beta Ziliani and Rodrigo Ribeiro. **Redex  $\rightarrow$  Coq: towards a theory of decidability of Redex's reduction semantics.** February, 2024. **Sent for peer-review to the Fifteenth Conference on Interactive Theorem Proving, ITP'24.**
  - Thesis:
    - Mallku Soldevila. PhD thesis: **Semántica operacional y su aplicación para el estudio de recolección de basura, en Lua 5.2** (spanish). In *Biblioteca Daniel Oscar Sonzini*, FAMAF, UNC. August, 2021.
    - Mallku Soldevila. Bachelor thesis: **Formalización de la semántica del lenguaje de programación Lua** (spanish). In *Biblioteca Daniel Oscar Sonzini*, FAMAF, UNC. March, 2015.
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## Talks/posters

- **Extended talk:**  
*Introducción a los asistentes de pruebas basados en teoría de tipos dependientes* (spanish).  
At Reunión Anual De La Unión Matemática Argentina (UMA'23).  
**Salta, Argentina**  
September, 2023
- **Understanding Lua's garbage collection: Towards a formalized static analyzer.**  
At 22nd International Symposium on Principles and Practice of Declarative Programming.  
**Virtual**  
September, 2020
- **Semántica operacional y su aplicación para el estudio de recolección de basura, en Lua 5.2**  
At Seminario LoRel (listed in researchseminars.org).  
**Virtual**  
July, 2020
- **Decoding Lua: Formal semantics for the developer and the semanticist.**  
At 13th Dynamic Languages Symposium, DLS'17  
[conf.researchr.org/track/dls-2017/dls-2017](http://conf.researchr.org/track/dls-2017/dls-2017)  
**Vancouver, Canadá**  
October, 2017
- **Poster: Decoding Lua: Formal semantics for the developer and the semanticist.**  
At ACM SIGPLAN conference on Systems, Programming, Languages and Applications:  
Software for Humanity, SPLASH'17 Poster track  
[2017.splashcon.org/track/splash-2017-Posters](http://2017.splashcon.org/track/splash-2017-Posters)  
**Vancouver, Canadá**  
October, 2017
- **Dos métodos para verificar que un lenguaje de programación no tiene bugs** (spanish).  
B. Ziliani and M. Soldevila.  
At Jornadas de la Computación, FAMAF, UNC, JCC-UNC  
**Córdoba, Argentina**  
November, 2016

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## Scientific committees/participation in scientific events

- **Member of the Computing Science's Advising Commission.**  
In Facultad de Matemática, Astronomía, Física y Computación (FAMAF, UNC).  
**Córdoba**  
October, 2023
  - **Member of the Computing Science's Curricular Committee.**  
In Facultad de Matemática, Astronomía, Física y Computación (FAMAF, UNC).  
**Córdoba**  
September, 2023
  - **Invited reviewer.**  
In 51st ACM SIGPLAN Symposium on Principles of Programming Languages (POPL 2024).  
**Virtual**  
August, 2023
  - **Member of the Artifact Evaluation Committee.**  
In 28th ACM SIGPLAN International Conference on Functional Programming (ICFP 2023).  
**Virtual**  
June, 2023
  - **Member of the organizer committee and chair.**  
In Tercer Encuentro del Grupo de Fundamentos de Lenguajes de Programación 2023 (FunLep'23).  
**Córdoba**  
May, 2023
  - **Member of the Artifact Evaluation Committee and Evaluation Committee.**  
In 37th European Conference on Object-Oriented Programming (ECOOP 2023).  
**Virtual**  
April, 2023
  - **Member of the Artifact Evaluation Committee.**  
In 44rd ACM SIGPLAN Conference on Programming Language Design and Implementation (PLDI 2023).  
**Virtual**  
April, 2023
  - **Member of the Artifact Evaluation Committee.**  
In 27th ACM SIGPLAN International Conference on Functional Programming (ICFP 2022).  
**Virtual**  
August, 2022
  - **Member of the Artifact Evaluation Committee.**  
In 43rd ACM SIGPLAN Conference on Programming Language Design and Implementation (PLDI 2022).  
**Virtual**  
April, 2022
  - **Session chair.**  
In Noveno Taller Argentino de Fundamentos para el Análisis y la Construcción Automática de Software (FACAS 2022).  
**La Falda, Córdoba**  
March, 2022
  - **Member of the Artifact Evaluation Committee.**  
In 26th ACM SIGPLAN International Conference on Functional Programming (ICFP 2021).  
**Virtual**  
August, 2021
  - **Member of the Artifact Evaluation Committee.**  
In 25th ACM SIGPLAN International Conference on Functional Programming (ICFP 2020).  
**Virtual**  
September, 2020
  - **Member of the Artifact Evaluation Committee.**  
In 22nd ACM SIGPLAN International Conference on Functional Programming (ICFP 2017).  
**Virtual**  
September, 2017
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## Teaching/supervision

- **Examination board member.** Córdoba, Argentina  
Undergraduate thesis. Bachelor in Computer Science.  
**Student:** Marsiglione, Francisco  
**Topic:** "Análisis y clasificación de preguntas y respuestas en espacios virtuales de formación profesional sobre desarrollo de software."  
**Advisors:** Dr. Benotti, Luciana and Dr. Echeveste, M. Emilia. December, 2023
- **Assistant Professor at "Introduction to Algorithms".** Córdoba, Argentina  
4 semesters, 10hs/week. Undergraduate course, at FAMAF, UNC. August, 2022 - August, 2024
- **Supervisor of thesis to obtain a Bachelor's Degree in Computer Science.** Córdoba, Argentina  
**Student:** Barraco, Ramiro Julián March, 2021  
**Topic:** "Formalization of type narrowing in the Crystal programming language."  
Under development.
- **Professor at "Undergraduate entrance course to FAMAF, UNC".** Córdoba, Argentina  
FAMAF, UNC. February, 2022
- **Undergraduate teaching assistant at FAMAF, UNC:** Córdoba, Argentina
  - "Algorithms and Data Structures 1" August - November, 2011
  - "Introduction to Algorithms" March - June, 2011
  - "Programming paradigms" March - June, 2010

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## Funding

### Grants received

- **Internal postdoctoral fellowship** Córdoba, Argentina  
Granted by Conicet (Argentina) 2021 - 2024
- **Internal doctoral fellowship** Córdoba, Argentina  
Granted by Conicet (Argentina) 2015 - 2020
- **Research support grant, type 1** Goiânia, Goiás, Brazil  
Granted by "Fundação de Apoio à Pesquisa" (Funape, www.funape.org.br/site/, Brazil) January - March, 2013
- **Research support grant, type 1** Goiânia, Goiás, Brazil  
Granted by "Fundação de Apoio à Pesquisa" (Funape, www.funape.org.br/site/, Brazil) 2012
- **Fellowship: Tecnologías de la Información y de las Comunicaciones** Córdoba, Argentina  
Granted by "Agencia Nacional de Promoción Científica y Tecnológica" (Argentina) 2011
- **Fellowship: Tecnologías de la Información y de las Comunicaciones** Córdoba, Argentina  
Granted by "Agencia Nacional de Promoción Científica y Tecnológica" (Argentina) 2010

### Groups

- **Member of "Logics, Interaction and Intelligent Systems" (LIIS).** Argentina  
Director: Dr. Carlos Eduardo Areces.
- **Member of "Logics and Dynamics of Programming Languages" (SINFIN).** International  
General coordination:  
Delia Kesner (Université Paris-Diderot, France)  
Santiago Figueira (CONICET & Universidad de Buenos Aires, Argentina)

### Projects

- **Member of project "Dynamic Logics (Reloaded) – DL(R)".** International  
SticAmsud Project. 2024 - 2025  
Project coordinator (for group at FAMAF, UNC): Dr. Carlos Eduardo Areces.
- **Member of project "Verificación Formal de la Semántica de Reducción".** Córdoba, Argentina  
SECyT Consolidar II, UNC. 2018 - 2022  
Researcher in charge: Dr. Beta Ziliani.

- **Member of project** “Formalización del lenguaje de programación argentino Crystal”  
SECyT Consolidar II, UNC.  
PICT D No. 2017-3315, Agencia.  
Researcher in charge: Dr. Beta Ziliani.

**Córdoba, Argentina**  
2018 - 2020

#### Travel funding

- **Complete funding for 2 months to visit members of the MISSION project at Saarland University (Saarbrücken, Germany).**  
March-April, 2024.  
MISSION project: <https://mission-project.eu/> (EU\$4,000).
- **Partial funding to attend the 44th ACM SIGPLAN Symposium on Principles of Programming Languages (POPL 2017).**  
University of Wisconsin (US\$1,320).

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#### Industry work experience

- **Research and development of an ecology simulator (educative game).**  
At *Laboratório de Tecnologia da Informação e Mídias Educacionais (LabTime)*, UFG  
[www.labtime.ufg.br](http://www.labtime.ufg.br)

**Goiânia, Goiás, Brazil**  
January, 2012 - May, 2013

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#### Courses, workshops

- **Java Programmer**  
*Programa ProFoCo, UTN, Facultad Regional Córdoba*
  - Completed.
  - Professor: Ing. Valerio Frittelli.
- **Web development**  
*UTN, Facultad Regional Córdoba*
  - Completed (100 hours).
  - Professor Ing. Ricardo M. Espeche.

**Córdoba, Argentina**  
March - June, 2007

**Córdoba, Argentina**  
2006

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#### Languages

- **Spanish:** native language.
- **English:** advanced level.
- **Portuguese:** intermediate level.