

SANTIAGO BRAGAGNOLO

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BIOGRAPHIC DATA

Complete name Santiago Pablo Bragagnolo
Birth date 16 november 1982
Nationalities Argentinian, Italian

CONTACT

Linkedin linkedin.com/in/santiagoobragagnolo/
Portfolio santiagoobragagnolo.wordpress.com
Blog knowledgeconvergence.wordpress.com
Github github.com/sbragagnolo

EXPERIENCE BRIEF

Last title to obtain	Doctorate in Software Modernisation
Industrial Software Engineering experience	12 years
Industrial Research Engineering experience	9 years
Teaching programming on university	11 years

METHODOLOGY STRENGTHS

Working methodologies	Agile, KanBan, XP, Pair programming
Software design	Domain Driven Design
Quality assurance	Continuous Integration, Continuous Delivery
Development	Test driven development
Languages	Pharo, Smalltalk, C, C++, Typescript, Java

LATEST EXPERIENCES

Language, Paradigm, Library, UI and Architecture Migration	PhD Industrial Thesis
Blockchain, Ethereum, Solidity	INRIA
Indoor robotics, ROS, Autonomous Navigation	INRIA + IMT Douai.

LANGUAGES

Spanish	Native
English, French	Written and spoken fluent competence
Italian	Written basic competence. Spoken medium competence
Chinese	Written and spoken basic competence

CURRENTLY WORKING ON

Berger Levrault <i>Research Engineer — PhD Student</i>	May 2020 - Currently
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Doctorate Thesis. Expected to finish May 2023.

Migration of legacy programs to web architectures: The case of migrating Microsoft Access programs to Angular and Microservices.

Extended CV

The rest of the CV consists of sections detailing the different studies and experiences, split by kind of experience: Formal Education, Industrial working experience, Open source projects experience and Teaching experience.

FORMAL EDUCATION

- **Université de Lille 1** May 2023
PhD in Software Modernisation *Lille, France*
- Migration des logiciels legataires vers technologies web.

- **Université de Lille 1** 2018
Master 2, Computer Science *Lille, France*
- Application Infrastructure and Software Engineering

- **Universidad Tecnologica Nacional (UTN)** 2011
Software Engineer *Ciudad de Buenos Aires, Argentina*
- Engineering School. Aborted by personal reasons. Approved 7 semesters out 10.

- **Ing. Otto Krause** 2001
Software Engineer *Ciudad de Buenos Aires, Argentina*
- Technic in computer science.

INDUSTRIAL WORKING EXPERIENCE

- **INRIA - RMOD Research Engineer** Avril 2019 - April 2020
Software Research Engineer
Position in relation with a bilateral contract Berger Levraut - INRIA.

Design and implementation of blockchain tools.
- Analysis, design and implementation of application data flow detection with Moose technology.
- Definition of an industrial thesis subject with Berger Levraut for continuation as PhD student.
- Development of VB net, VBA and VB-6 exporter at Moose-FAMIX Model.

- **INRIA** April 2015 - Avril 2019
Technological transfer Engineering
Research and applied research engineering position, meant to develop bilateral contracts in between INRIA and enterprises.

To mature and adapt the technologies developed by different INRIA's research teams for satisfying the needs of the industry.
- To participate in the presentation the INRIA's technological offer.
- The following INRIA projects are done in the context of this job position.

- **INRIA RMOD - Technological transfer project** October 2016 - Avril 2019
Blockchain's Smart contract analysis
- Research analysis over the blockchain's smart contracts subject.
- Prototype development for exploring research possibilities.
- Development on Solidity, Javascript and Pharo.

- Conception and implementation of a Solidity's language interpreter for the generation of inspection tools.
- Conception and implementation of a Ethereum virtual machine simulator with advanced debugging utilities.
- Conception and implementation of a Ethereum virtual machine bytecode decompiler.
- Conception and implementation of graphical navigation tools for Ethereum.
- Conception and implementation of query language for Ethereum.
- Writing of scientific articles
- The ongoing work has been presented on PharoDays 2017 conference (<http://pharo.org/2017PharoDays>) as "Navigating the blockchain"
- <https://www.slideshare.net/sbragagnolo1/a-living-programming-environment-for-a-living-blockchain>

INRIA Non-A - Technological transfer project

December 2015 - Mars 2016

Sephyr - Intelligent table

- Conception and development of a voice commanded robotised table
- Modification and adaption of local and global planning algorithms for the specificity of the domain
- State machine based protocol analyser for voice command recognition
- Voice command module driver.
- Robot's physical model definition
- Developed with C++ and Pharo, Designed to run in a ROS environment.
- <https://www.inria.fr/en/centre/lille/news/zephyr-the-intelligent-voice-activated-overbed-table>

Inria RMOD -Maturation of technology

June 2016 - Decembre 2016

Scale

- Library for scripting and REPL for Pharo
- Developed with Pharo and BASH.
- Tested and automatically builded by travis
- <https://github.com/guillep/Scale>

INRIA Non-A -Maturation of technology

April 2015 - April 2020

MakROS

Data-transfert based component oriented framework for robotic behaviours ROS compatible.

Using for development Pharo. Conceived for fast behaviour prototyping.

- Includes multiple default components, giving full support to the basic ROS library needs, as TF/TF2, in a component fashion.
- You can check it out from:
- <https://github.com/sbragagnolo/Makros>

INRIA Non-A

April 2015 - April 2020

MetaDDS/SimpleDDS/ROSDDS

Skeleton and canon implementation of a Data Delivery Service (publisher/subscriber) framework and it full ROS and Pharo smalltalk specific implementation. Based on ROS standard and OMG-DDS standard.

Using for development Pharo

- Extra features for robustness as node reconnection and master restart recovery.
- Tested and automatically builded by travis
- You can checkit out from:

- <https://github.com/sbragagnolo/MetaDDS>
- <https://github.com/sbragagnolo/SimpleDDS>
- <https://github.com/sbragagnolo/ROSDDS>

Inria RMOD - Maturation of technology
TaskIT

April 2015 - April 2020

- Maintenance and development of TaskIT framework.
- TaskIT is an object oriented framework for concurrent and parallel processing. Simple, debuggable and powerful, mean to meet real time requirements in a Green thread based environment.
- <https://github.com/sbragagnolo/TaskIT/main>

Inria RMOD Maturation of technology
Android Pharo VM

June 2016 - December 2016

- Conception and development of the adaption of the CogVM virtual machine for running on Android
- Developed on Java Android, C++ and Pharo.
- Building automation.
- Tested and automatically builded by travis
- <https://github.com/sbragagnolo/pharo-vm>

Inria Non-A - Maturation of technology
Trajectory algorithms

April 2015 - June 2016

- Implementation of trajectory algorithms based on adaptive control methods
- Developed in C++ . Prepared to run on ROS environments.
- Tested and builded automatically on a private Jenkins

Ericsson
Senior Java and C++ consultant developer

May 2014 - September 2014
Malaga, Spain

- ERA (Ericsson ran analyzer) Project. C++ and Java based high-performance client
- TPS (Trace processor server) Project. Java high-performance server for trace processing (system that faces problems of teras of data) with some IronPython for processing text files, with part of processing over hadoop and hive.
- ODG (OSS Data gateway) Project. Project that analyze data from OSS servers. Also Java high-performance server.
- All of these project are highly Multithreaded and based on distributed processing.
- The data containers of these project are based on Hadoop File system.
- Most of the data processed is reduced and stored into the client mapping data from several servers with workflow processing. (Based in ETL pattern)
- TDD and Continuous delivery evangelizer.
- Working under Agile with Scrum methodology

Ecole des mines de Douai
Software Research Engineer, Robotics

September 2012 - February 2014
Douai, Nord-Pas-de-Calais

- I am in charge of the development of the project RoboShop (<http://car.mines-douai.fr/RoboShop>), a robotic system for aiding persons to navigate into unknown spaces.
- My responsibilities are planning, engineering, development and technologic report writing for the projects RoboShop and PhaROS (<http://car.mines-douai.fr/PhaROS>).
- PhaROS is a framework for developing robot solutions for Pharo Smalltalk on the robotic middleware ROS. It implements a real time distributed architecture.

- The project RoboShop was presented in Picom and Vad Conext 2013 (Some content about <http://car.mines-douai.fr/2013/11/roboshop-demo-16oct2013/>)
- The project PhaROS has been presented by me in FOSDEM 2014, (<https://fosdem.org/2014/>) as PhaROS Towards Live Environments in Robotics in the Smalltalk devroom
- <https://www.slideshare.net/sbragnolo1/fosdem-1>
- It was also presented by Dr Noury Bouraqadi on different conferences
- <https://www.slideshare.net/nourybouraqadi/robo-shop>
- <https://www.slideshare.net/nourybouraqadi/roboshop-helper-robot-in-a-shopping-mall>
- From this position i also contribute with the project TaskIT (<http://smalltalkhub.com/#!/sbragnolo/TaskIT>), which is a project for managing parallelism and concurrence in a Pharo smalltalk environment.
- The used technologies for the robot side are: Pharo, ROS, Python and C++. For the graphical interface: Pharo, Seaside, Bootstrap, Javascript, html+css3

Fanwards (<http://www.fanwards.com/>)

November 2011 - August 2012

Software engineer, gamification

Ciudad de Buenos Aires, Argentine

- I am in charge of design and implementation of the web application Fanwards, front and backend. working with the CTO.
- Using for front end heavy weight clients based on javascript technologies such as Backbone.js, jquery, underscore.js , mustache and for the view HTML5 and CSS3.
- Using for the backend a Google App Engine (GAE) Server with Scala & Java, Objectify for the mapping between objects and google's BigTable, Spring MVC and RestFul frameworks for routing and dispatching of exposed and scheduled behaviours. Finally twitter4j and facebookRest for interacting with social networks.
- From this position i have developed: a full intelligent single-page client based on javascript, a small functional library for javascript implementing some of the common haskell features (partial application, curryfication and function compositions), really useful abstractions for AJAX request processing, also developed a social network crawler for analysing users comments for branding (with heuristics to analyse the meaning of each comment).
- From this position i also participate not just in software design, planning and architecture but also in the gamification process of the application.
- During all the development of the application we used Scala BDD and TDD techniques with great success.
- Crossing data for brand reports with Map reduce.

Aufiero Informatica

March 2011 - November 2011

Software architect, designer & developer

Ciudad de Buenos Aires, Argentine

- This company is a small software factory and AVG antivirus reseller for latino america. I worked two times in this enterprise, look down in previous experiences to look my progress. In this case i was also in charge of a 5 person team.
- Reseller/Partner management system based on Groovy on Grails technology and communicating to software legacy done in PHP.
- Mail campaign web system for internal usage (For AVG campaigns). Done in Groovy and Grails / Jasper reports
- Email send system multi-engine, auto-deployable with load balance and mail tracking. Done in Groovy and Java, using Apache Email.
- Single sign on system for our different platforms - Done in Groove and grails.

Buscouniversidad .com

January 2011 - March - 2011

Developer & system designer

Ciudad de Buenos Aires, Argentine

- In this work i'am in charge of designing of Data base structure, SQL queries. In the design of the directory system (such as OLX, Craiglists, etc, but specific for universities) based on PHP with Zend framework, sphinx and Javascript with JQuery. And in the development of processing tools
- From this position i had developed mail processing based on patterns for recognising rejects and angry people (python); an easy code generator for Zend framework; the administration application of the site.

Aufiero Informatica

Software designer & developer - Project manager

March 2007 - December 2010

Ciudad de Buenos Aires, Argentine

- In this company i had being in several projects, always as software designer and developer, and in the last year also as architect.
- The followings are the project i did and my role
- Accountant management system - Designer and developer - Java, Flex 3.1 JBoss
- Editorial integral management system (stock, accounting, finances, sells, shopping, etc) - Maintainer, developer and DBA - visual basic 6.0 / sql server / Crystal reports. Implementation of ETL pattern for making up a small datawarehouse for sales analysis.
- Intranet tool for client management Pharo/Squeak - PostgreSQL - Seaside.
- Classified ads management system - Maintainer, developer - Net Framework 3.0 C# Nhibernate Windows form
- Billing online system - Software designer, developer - PHP, CakePHP, Javascript jquery. In this project we were contracted for offshoring by Ixole, a company from Barcelona. I worked in this case also as face of our team, dealing about deadlines and requirements. This project lasted one year.
- Electronic Invoice system (Based on the local taxes system) - Software designer, developer - Java, Groovy and Grails / jasper reports.

MSA

DBA Oracle 9i & Postgres SQL

2006

Ciudad de Buenos Aires, Argentine

- In this company i had in charge the administration of three productive databases related with ticket system (kind of ticketek but with less stress)
- My tasks were Data base monitoring, Backup, SQL Security, Database and query tuning for the productive systems (Oracle 9i) and making up configurations for eventual projects (Usually Postgres SQL)
- Parallely i had some small responsibilities in eventual projects

Research for decision

Developer

2003 - 2005

Ciudad de Buenos Aires, Argentine

- In this company my main responsibility was the development of polls in eole/saxophone (language and poll system).
- Also i was in charge of maintaining servers, machines and network.

Freelance

Developer, Designer, Architect, DBA & Client management

2002 - 2009

Ciudad de Buenos Aires, Argentine

- This are the projects i have developed as independent, several of them still in usage, and i maintained almost them for one to two years.
- November 2002 to July 2003 - Nutritional preparations management system for a Parenteral Laboratory (UNANUT) - Visual Basic & Microsoft Access (Supported until 2005)
- June 2003 to August 2003 - Stock management system for a box factory - Visual Basic & Microsoft Access (Supported until 2004)
- July 2009 to March 2010 - Certification and courses management system SFAP - PHP (<http://www.facpce.org.ar/>) (Supported until 2011)

OPEN SOURCE PROJECTS EXPERIENCE

On my own

October 2014 - Currently

MakROS

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- Includes multiple default components, giving full support to the basic ROS library needs, as TF/TF2, in a component fashion.
- You can checkit out from:
- <https://github.com/sbragagnolo/Makros>

On my own

October 2014 - April 2020

MetaDDS/SimpleDDS/ROSDDS

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- <https://github.com/sbragagnolo/SimpleDDS>
- <https://github.com/sbragagnolo/ROSDDS>

On my own

Feburary 2014 - April 2020

TaskIT

TaskIT had born and grow during the development of PhaROS during my job at Ecole des mines, and it was mean to be object oriented, easy to use, and with powerful, well tested, simple and reliable processing abstractions, in order to serve in a real-time processing environment.

It has been introduced in Pharo 9.

- You can checkit out from <https://github.com/sbragagnolo/TaskIt>

Google summer of code

May 2012 - September 2012

Type inference on dynamic languages

Ciudad de Buenos Aires, Argentine

- I am in charge of design, planning, research, engineering, responding to my mentor Nicolas Passerini (npasserini@gmail.com).
- The proposal is registered <http://gsoc2012.esug.org/projects/type-inference>
- From this project i have implemented a concrete type inference system for Pharo Smalltalk 1.4, a graph of methods to be executed as response of the analysis of a given expression, and an object oriented logger, which is now being used in several Pharo projects. I also took the work of blogging all the work progress in a blog. This project was presented in the conference ESUG 2012 - Gent - (<http://www.esug.org/wiki/pier/Conferences/2012>)
- Site - <http://concretetypeinference.blogspot.fr/>.
- Concrete type inferencer and the call graph analyser (Kwisatz Haderach) - <http://ss3.gemstone.com/ss/ConcreteTypeInference/>
- Paule le poulpe; Object oriented Logger - <http://smalltalkhub.com/mc/sbragagnolo/PLP/main>

ESUG financed Project

May 2011 - September 2011

Developer in DBXTalk

Ciudad de Buenos Aires, Argentine

- In this project i am in charge of design and implementation of the scaffolding for DBXTalk (DBXTools) and the bridging with Glorp framework.
- DBXTalk (<http://dbxtalk.smallworks.com.ar/>) is a bridge that gives support for the database systems to mainstream Squeak and Pharo smalltalk.
- This project with the porting of Glorp to Pharo (by Guillermo Polito) were presented in ESUG 2011 - Edimburgh (<http://www.esug.org/wiki/pier/Conferences/2011>)

FACPCE financed Project - Used for SFAP

2009

Developer in Cornucopia framework

Ciudad de Buenos Aires, Argentine

- PHP Cornucopia. Is an already obsolete full stack framework. It provides:
 - Collections
 - Simple ORM configurable by metadata
 - Simple dependency injector
 - HTML reification for composing and HTML generation
 - Javascript generation by metadata (Requirements, etc)
 - Request reification as object
 - Session reification as object
- Check it out from: <https://github.com/sbragagnolo/cornucopia>

On my own for an university topic

2007

Developer in C Objects framework

Ciudad de Buenos Aires, Argentine

- C Objects. Is a framework to provide several object oriented programming features to C. It provides:
 - Collections (Dictionary, List).
 - Strings
 - Server, with node objects for managing requests
 - Automaton for simple language interpretation
 - Threads reification
 - Mutex and Conditional reifications
 - Error management (managed by signals, giving the change to register error handlers and to raise errors)
 - Memory management.
- Checkit out from: <https://github.com/sbragagnolo/c-objetos>

TEACHING EXPERIENCE

ISEN M1 Robotics

Introduction to Bash

Novembre 2022 / 2023

Lille, France

- Teaching the following concepts, techniques and tools (10hs of class time), Preparing the contents, evaluation means and practical exercises.
 - Linux
 - Bash commands (general use, file, network and user management).
- Reference contact: gilles.tagne@yncrea.fr

ISEN M1 Robotics

Autonomous Navigation with ROS

2019 / 2020 / 2021 / 2022 / 2023

Lille, France

- Teach the following concepts, techniques and tools (28 hours of course), prepare the contents, evaluation means and practical exercises. Course presented 5 years in a row.
 - ROS
 - Topics, Nodes, Services, DDS communication protocol, Networks, Distributed systems in robotics.
 - Catkin and makefile for building ROS applications.
 - Python, C++ and Pharo for ROS oriented robotics.
 - ROS Debugging and graphical utilities
 - Concepts
 - Localisation, Path planning (global/local), Algorithms SLAM
- Reference contact: gilles.tagne@yncrea.fr

Université de Lille 1 / M2 MRA-FC

Introduction to Blockchain

2019 / 2020 / 2021 / 2022 / 2023

Lille, France

- Teach the following concepts, techniques and tools (6 hours of class). Preparing the content and means of evaluation Course presented 5 years in a row.
 - Blockchain base concepts (Blocks, Transactions, Hashing, Consensus algorithms).
 - Smart Contracts (Ethereum, solidity, building contracts, interacting remotely with contracts).
- Reference contact : ciprian.tudor@univ-lille.fr

Polytech Lille

Pratique programmation par objets

2019 / 2020 / 2021

Lille, France

- Practical course Java TP and Project.
- Practice on Object Oriented Programming, 20h, Tp, Master 1 (Gis4), Polytech de Lille
- Object Oriented Programming Project, 24h, Tp, Master 1 (Gis4), Polytech de Lille
- Object Oriented Programming Project, 24h, TP, License 3 (Gis3), Polytech de Lille
- Reference contact: anne.etien@polytech-lille.fr

Universidad Tecnologica Nacional (UTN)

*Adhonorem teaching assistant at Advanced programming techniques
Argentina*

March 2007 - July 2012

Ciudad de Buenos Aires,

- Teaching the next concepts, techniques and tools
 - Object oriented programming: Design Patterns, Refactoring and Meta-programming.

- Methodologies: TDD/BDD, DDD, Agile.
- Technologies: Maven, IDEs (Eclipse, Idea, Netbeans), JUnit, ScalaTest, SVN & GIT.
- Languages: Scala, Python, Smalltalk, Self.
- Modern applied concepts: Traits and Mixins, Lambdas / anonymous functions.

Universidad Tecnologica Nacional (UTN)

Adhonorem teaching assistant at Programming paradigms

March 2007 - December 2011

Ciudad de Buenos Aires, Argentine

- Teaching the next concepts, techniques and tools
 - Object oriented paradigm: Pharo, Squeak, Dolphin.
 - Functional oriented paradigm: Haskell (GHC, WinHugs).
 - Logical oriented paradigm: Swi prolog.

Fundacion Proydessa

Oracle DBA Instructor

March 2006 - November 2007

Ciudad de Buenos Aires, Argentine

- In this foundation i worked as instructor of three of the four basic modules of Oracle for Database administration
- SQL (Module 1)
- Engine Architecture (Module 2)
- Tuning (Module 4)
- I also participate as instructor in the instruction of new instructors for modules 1 and 2.