

## Curriculum Vitae

### Julio César Carrasquel Gámez

Researcher and PhD Candidate | Engineer in Computer Science



## PERSONAL INFORMATION

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**Date of birth:** December 19<sup>th</sup>, 1990  
**Birthplace:** Caracas, Venezuela  
**Nationality:** Venezuelan  
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## RESEARCH INTERESTS, SKILLS & TECHNOLOGIES

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**Research Areas:** Petri Nets, Process Mining, Algorithm Design, Software Engineering, Distributed Systems, Computer Networks, Internet of Things, Trading Systems.  
**Languages:** C/C++, Java, Python, Haskell, Assembly MIPS, HTML/CSS/JavaScript, Android.  
**Software tools:** Eclipse, Android Studio, VirtualBox, Git, Linux, Spin, CPN Tools, ProM.  
**Standards:** SOAP, REST, JSON, HTTP, TCP/IP Stack, LoRaWAN, FIX.  
**Databases/big data** MySQL, MongoDB, Hadoop MapReduce, Disco.  
**Hardware:** STM32 Micro-controllers, Arduino, GPS receivers, Temperature and range sensors.

## EDUCATION

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### **National Research University Higher School of Economics. (2018 – 2021). Moscow, Russia.** **Doctorate in Computer Science**

PhD program in Computer Science. Thesis work: Modeling and validation of stock trading systems using Petri nets and process mining for modelling.

### **La Sapienza University of Rome. (2015 – 2017). Rome, Italy.** **Master of Science of Engineering in Computer Science**

Program fully taught in English language. The courses taken were a combination ranging from theoretical computer science, data science, process mining and Internet of Things. Thesis work: Development of an algorithm for the efficient distribution of wireless resources of an IoT network. The work was published in a scientific paper presented at 17th Annual Mediterranean Networking Workshop (Med-Hoc-Net 2018) that took place at the Capri Island, Italy (June 2018).

### **Central University of Venezuela (2008 – 2015). Caracas, Venezuela.** **Licentiate Degree in Computer Science**

Degree in Computer Science with specialization in Computer Networks. Graduated with honorific mention. Thesis work: Development of Prosega/CPN - a tool for analyzing protocols using Petri Nets and Automata Theory. The tool was used in the analysis of IEEE 802.16. The software was presented in a tool session at the International Conference of Petri Nets (Torun, Poland, 2016), and its related paper published at the Proceedings of the Institute for System Programming of the Russian Academy of Sciences.

## PROFESSIONAL EXPERIENCE

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### **National Research University Higher School of Economics (November 2018 – ). Moscow, Russia. Researcher and Teaching Assistant.**

Research assistant at the Laboratory of Process-Aware Information Systems (PAIS). In charge of the project for modelling and validating stock trading systems using process mining. Teaching assistant in the courses:

- Formal Methods in Software Engineering (1<sup>st</sup> year Master's Program in Software Engineering)
- Algorithms and Data Structures (1<sup>st</sup> year Master's Program in Data Science and Business Analytics)

### **INTECS Solutions SpA (January 2017 – April 2017). Rome, Italy.**

#### **Traineeship in Embedded Software**

Traineeship at INTECS - Italian company focused on Embedded Systems for sectors such as railways and automotive. Project: Development a tank water-level & monitoring solution using the STM32L476 micro-controller which belongs to the STM32L4 family of low-power microcontrollers. The system included other sensors for capturing the water level, temperature and the GPS messages.

### **Bee Concept Solutions (January 2016 – May 2016). Caracas, Venezuela.**

#### **Java Software Engineer**

Bee Concept Solutions is a software company with operations in Venezuela, Colombia, USA, and Panama. Responsibilities: Development of the payment module of an e-commerce platform for Plumrose (food distribution for retailers). Through the module, customers were allowed to notify their payments to Plumrose. My work covered the whole tasks through the software development process: requirements analysis, module design and implementation, testing phases. The web application framework used in this project was Java.

### **Wincor Nixdorf International (August 2013 – May 2015). Caracas, Venezuela.**

#### **System Analyst | Android & Desktop Developer**

Wincor Nixdorf (nowadays part of Diebold Nixdorf) is a corporation providing services for the banking sector. In Venezuela, the company developed INFINIX - a multi-channel engine by which different clients (mobile, web, ATMs, etc.) consume a determined set of financial services. Main Responsibilities: Developer for INFINIX mostly developing the clients who consume the engine services. These clients were a desktop client built on JavaFX and a mobile client for Android platforms.

## LANGUAGES

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- Spanish (mother tongue).
- English (advanced – fluent).
- Italian (advanced – fluent).
- Russian (intermediate).

## PUBLICATIONS

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- J.C Carrasquel, I.A. Lomazova, A. Rivkin. "Modeling Trading Systems using Petri Net Extensions". CEUR Workshop Proceedings, 2020. (*in press*).
- J.C Carrasquel, S.A. Chuburov, I.A. Lomazova. "Pre-Processing Network Messages of Trading Systems into Event Logs for Process Mining". CCIS, Springer, 2020. (*in press*).
- J.C Carrasquel, I.A. Lomazova, I.L. Itkin. "Towards a Formal Modelling of Order-driven Trading Systems using Petri nets: A Multi-Agent Approach". In: Lomazova, I., Kalenkova, A., Yavorsky R. (eds.) Proceedings of the MACSPRO Workshop 2019. CEUR Workshop Proceedings, vol. 2478, 2019.

- J.C Carrasquel, I.A. Lomazova. "Modelling and Validation of Trading and Multi-Agent Systems: An approach based on Process Mining and Petri nets. In: van Dongen, B., Claes, J. (eds.) Proceedings of the ICPM Doctoral Consortium, co-located with the 1<sup>st</sup> International Conference on Process Mining (ICPM 2019). CEUR Workshop Proceedings, vol. 2439, 2019.
- J.C. Carrasquel, A. Morales, M.E. Villapol. "Prosega/CPN: An extension of CPN Tools for Automata-based Analysis and System Verification". Trudy ISP RAN/Proceedings of the Institute for System Programming of the Russian Academy of Sciences, vol. 30, issue 4. 2018. pp. 107-128.
- F. Cuomo, J.C Carrasquel Gámez, A. Maurizio, L. Scipione, et al. "Towards traffic-oriented spreading factor allocations in LoRaWAN systems". 17th Annual Mediterranean Ad Hoc Networking Workshop (Med-Hoc-Net 2018), IEEE, 2018, pp. 1-8.

## **PARTICIPATIONS IN CONFERENCES AND OTHER EVENTS**

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- International Workshop on Petri Nets and Software Engineering. Presentation: Modeling Trading Systems using Petri Net Extensions. *Online*. June 2020.
- International Conference on Software Testing, Machine Learning and Complex Process Analysis. Presentation: Pre-Processing Network Messages of Trading Systems into Event Logs for Process Mining. Tbilisi, Georgia, November 2019.
- International Conference on Process Mining (ICPM 2019 – Doctoral Consortium Track). Presentation: Modelling and Validation of Trading and Multi-Agent Systems: An approach based on Process Mining and Petri Nets. Aachen, Germany, June 2019.
- Modeling and Analysis of Complex Systems and Processes (MACSPro 2019). Presentation: Towards a Formal Modelling of Order-driven Trading Systems using Petri nets: A Multi-Agent Approach. Vienna, Austria, March 2019.
- Annual Mediterranean Ad Hoc Networking Workshop (Med-Hoc-Net 2018). Presentation: Towards traffic-oriented spreading factor allocations in LoRaWAN systems. University of Naples International Center for Scientific Culture. Capri Island, Italy, June 2018.
- Spring/Summer Young Researchers Colloquium on Software Engineering (SYRCoSE 2018). Presentation: Prosega/CPN: An extension of CPN Tools for Automata-based Analysis and System Verification. Yaroslav-the-Wise Novgorod State University, Veliky Novgorod, Russian Federation, May 2018.

## **OTHERS**

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- Participant at the ACM (Association for Computing Machinery) - Software Programming Marathon. (2009 and 2010). Caracas, Venezuela.
- Volunteering experience as a teaching assistant at the Municipality of Chacao, Caracas. Working as a teacher assistant for aged people on basic computer knowledge courses (MS Office, Social Networks, E-mail management). (2014). Caracas, Venezuela.