

# LUISA BARRERA LEÓN

## System Engineer

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Turin, Italy

luisabarreraleon

## ABOUT ME

I am a Scientific Researcher with a Ph.D. in Informatics and over five years of experience in Human-Computer Interaction (HCI), Data Visualization, and Adaptive Systems to create engaging and effective solutions for diverse users and contexts. I have a strong background in human perception, user experience design, information visualization, and adaptive systems. I aim to advance in HCI/UX and data visualization, contributing to the scientific community and society with my research projects and my passion for teaching.

## PROGRAMMING

Currently, I develop DataViz tools with Python and Matlab. Formerly I worked with Java, Java EE and C++.

Python

Matlab

Java

C++

SQL

HTML

JavaScript

UML

BPMN

Latex

## TOOLS

I am using Anaconda, Matlab, and Web tools for my recent dev projects.

Anaconda

PyCharm

Eclipse

Matlab

Ionic

Tableau

Data Studio

StataSE

Figma

Lucidchart

Balsamiq

MsOffice

## LANGUAGES

Spanish: **Native**

## EDUCATION

### Ph.D. - Computer & Control Engineering | [Politecnico di Torino](#)

Oct 2018 - Oct 2022

Turin, Italy

- Thesis work on Saliency Prediction for the Data Visualization Design Process.

### M. Sc. - Computer & System Engineering | [Pontifical Xavierian University](#)

Jan. 2012 - Dic. 2014

Bogotá, Colombia

- Thesis work on a dynamic user interface generator framework to improve usability. GPA: 4.08 (0 - 5.0).

### Bachelor - System Engineering | [Pontifical Xavierian University](#)

Jul. 2006 - Jun. 2011

Bogotá, Colombia

- Major project was the analysis and design of a tool that provides personalized services to gym users. GPA: 4.01 (0 - 5.0).

## EXPERIENCE

### Assistant Researcher | [DISIT Department of Università del Piemonte Orientale](#)

Apr. 2023 - Ongoing

Alessandria, Italy

- Project Name:* Design and development of systems for monitoring vital and non-vital parameters of frail people through the use of wearable devices.

### Operative Systems Teacher | [DISIT Department of Università del Piemonte Orientale](#)

Nov. 2023 - Ongoing

Verceli, Italy

- Teach:* fundamental concepts of Operative Systems to second-year informatics students.

### Assistant Researcher | [DAUIN Department of Politecnico di Torino](#)

Dec. 2018 - Dec. 2022

Turin, Italy

- Project Name:* Human Computer Interaction and Intelligent Systems.

### Assistant Teacher | [DAUIN Department of Politecnico di Torino](#)

Sep. 2019 - 2022

Turin, Italy

English: **Medium/B2**

Italian: **Medium/B2**

## STRENGTHS

I always have a solution and a lot of ideas to solve bugs and immediate problems.

Idea Generator

Problem-Solving

Integrator

Creative

Versatile

Empathetic

Artistic

## HOBBIES

In my spare time, I am an aerial and terrestrial dancer.

Dance

Air Disciplines

Weaving

Teaching

- *Teach*: Informatics laboratory class (python programming language).

## Teacher | Pontifical Xavierian University

📅 Apr. 2014 – Dec. 2017

📍 Bogotá, Colombia

- *Teach*: Advanced Excel, ADOO (Object Oriented Analysis and Design), Algorithm Thinking (C++), and Introduction to System Engineering. Coordinator of Social Projects, Professional Practice, and Undergraduate Final Project.
- Tutoring Undergraduate Final Project (6).
- Member of the Master and Business Architect Specialization committees. Creator and sponsor for ACM-Women student group.

## Consultant Researcher | IT Department of San Ignacio University Hospital

📅 Aug 2017 – Jan. 2018

📍 Bogotá, Colombia

- Information gathering about international standards.
- Survey of best Hospital Management Information Systems.
- Literature review about HIS (Health Information System) development process.

## Consultant Researcher | Heinsohn Business Technology

📅 Aug 2017 – Jan. 2018

📍 Bogotá, Colombia

- *LION Project*: Support for the development of enterprise applications through the use of code-generation frameworks.
- *Scientific activities*: study and define the theoretical framework and state of the art on the theme of the project
- *Technical Activities*: implementation of a wizard tool for code generation (Java EE and Maven).

## PUBLICATIONS

### | Journals

📅 2015 – 2022

- Luisa Barrera-Leon, Fulvio Corno, Luigi De Russis (2022). *How the Preattentive Process is Exploited in Practical Information Visualization Design: A Review*, International Journal of Human-Computer Interaction, DOI: <https://doi.org/10.1080/10447318.2022.2049137>.
- Luisa Barrera-León, Angela Carrillo-Ramos, Leonardo Flórez-Valencia, Jaime Pavlich-Mariscal, Nadia Mejía-Molina (2016). *TUKUCHIY: A Dynamic User Interface Generator to Improve Usability*. International Journal of Web Information Systems (IJWIS). ISSN: 1744-0084.
- Maria Consuelo Franky, Jaime A. Pavlich-Mariscal, Leonardo Giral, Andrea Barraza-Urbina, Luisa Barrera-León, and Angee Zambrano. (2015). *Achieving Software Reuse and Integration in a Large-scale Software Development Company: Practical Experience of the Lion Project*. SIGSOFT Softw. Eng. Notes 40, 4 (July 2015), 1-9. DOI=<http://dx.doi.org/10.1145/2788630.2788643>.

### | Conferences

📅 2014 – 2022

- Luisa Barrera-Leon, Fulvio Corno and Luigi de Russis (2020) *Systematic Variation of Preattentive Attributes to Highlight Relevant Data in Information Visualization*, 24th International Conference Information Visualisation (IV), pp. 74-79, DOI:<https://doi.org/10.1109/IV51561.2020.00022>.
- Luisa Barrera-León, Angela Carrillo-Ramos, Leonardo Flórez-Valencia, Jaime Pavlich-Mariscal, Nadia Mejía-Molina, (2014). *Integrating Adaptation and HCI concepts to support Usability in User Interfaces: A Rule-Based Approach*. 10th International Conference on Web Information Systems and Technologies (Webist), Barcelona, Spain. April 3-5. ISBN: 978-989-758-023-9. DOI:<https://doi.org/10.5220/0004857400820090>.

- Luisa Barrera, Andrea Barraza, Saul Martínez, Angela Carrillo-Ramos. (2010). *ZUGYM: an agent-based system that delivers personalized services to customers Gyms*. In: 5th Colombian Computing Congress (5CCC). Cartagena Colombia. April 14 to 16. ISBN: 978-958-8387-40-6