Systems Analysis

Course Description

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Lecturer
Computer Engineer
School of Engineering
Universidad Distrital Francisco José de Caldas

2024-III

Outline

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Academic Experience

- **Computer Engineer**, M.Sc. in Computer Engineering, and *researcher* for 15 years.
- 7 years as **full-time associate professor** at colleges, for Computer Engineering programs.
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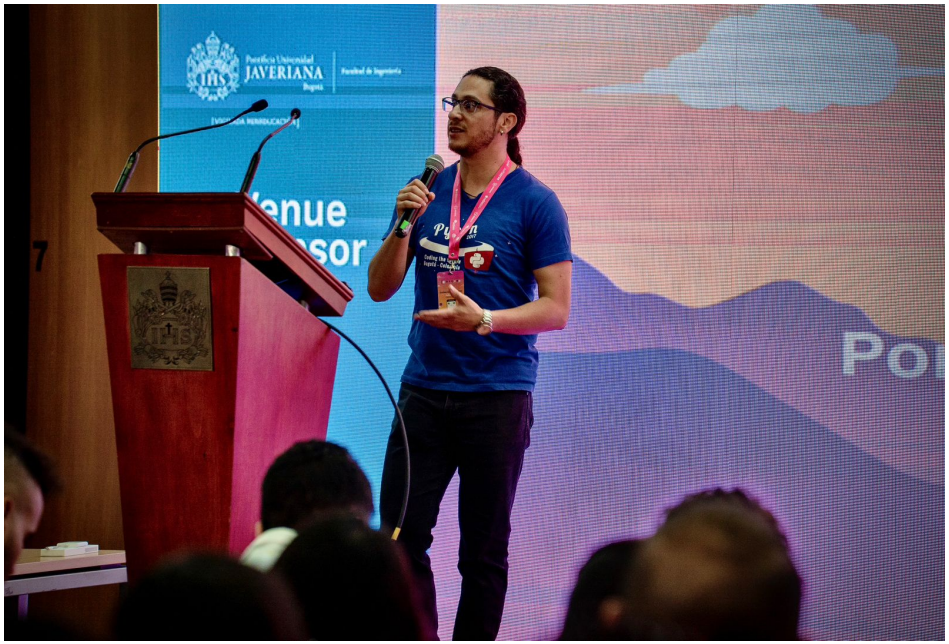

- PyCon Colombia and Python Bogotá **co-organizer**. Collaborations in ScipyLATAM and Jupyter LATAM.
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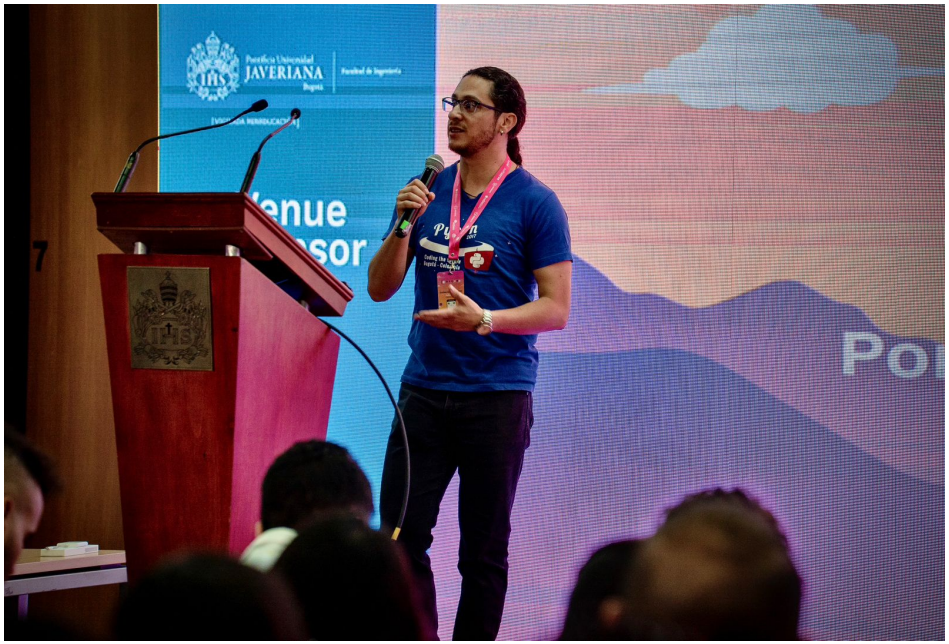

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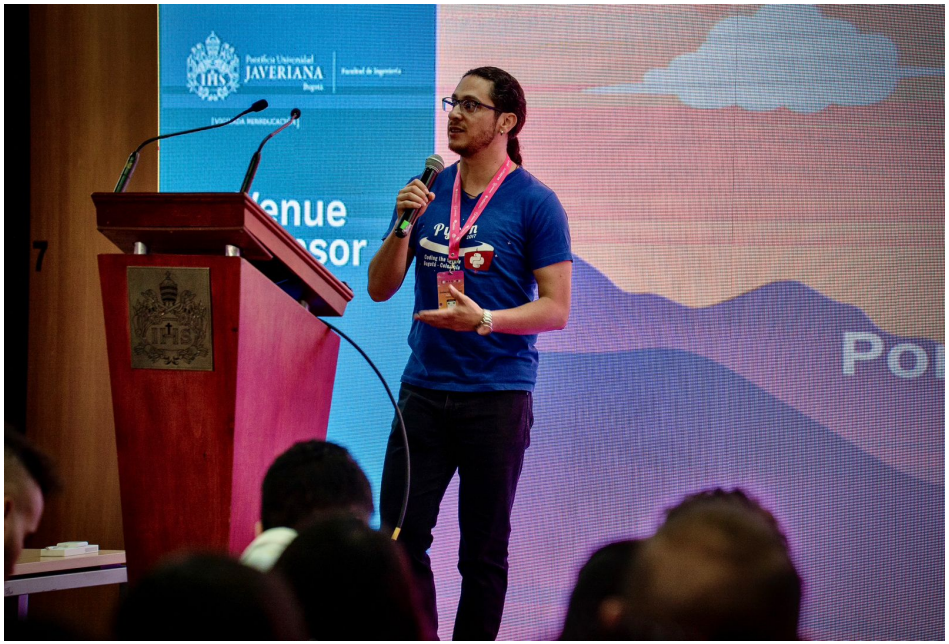

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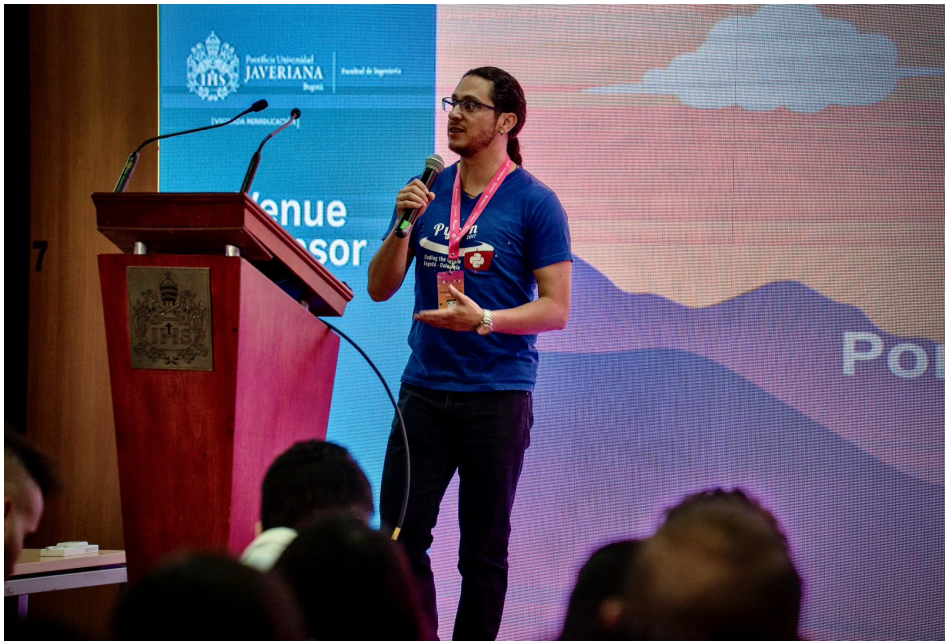

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Overview

This course is designed to introduce undergraduate students to foundations of **systems analysis** and a lot of multiple science paradigms. This is a course focused on thinking, and **problem solving**.

Classes will consist of lectures, **discussions**, practical examples, and workshops. Also, you must take some readings from *software systems*. In addition, there will be a **semester-long** project, as well **two** exams, **four** workshops, and **ten** additional assignmens.

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Goals

The main goal of this course is to provide undergraduate students with different **models concepts**, and **tools** for understanding and solving problems using **analysis systems** based on projects requirements.

At the end of this course you should be able to **create** a full **engineering solution** with a good level of **quality** metrics. Also, you should be able to **design** solutions in an **agnostic** way.

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Prerequisites

This is a basic course, so you must have some knowledge in:

- **Programming** in Python or C++.
- **Draw diagrams** to represent anything.
- **Git** basic usage, and **GitHub** basic usage.
- Use of **IDEs** like VS Code, Eclipse, or PyCharm.

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Syllabus I

Period	Topic	Time
Period I	Systems Thinking	4 sessions
	Information and Communication	2 sessions
	Workshop on Entrophy	1 session
	Swarm Intelligences	2 sessions
	Processes and Software	3 sessions
	Workshop on Swarm Intelligence	1 session
	Test 1	1 session

Table: Schedule for Period I

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Syllabus II

Period	Topic	Time
Period II	Analyst as Role	2 sessions
	Systems Design	3 sessions
	Workshop on Systems Design	1 session
	Business Systems	4 sessions
	Ethical Data Science	1 session
	Workshop on Expert Systems	1 session
	Simulation	2 sessions
	Test 2	1 sessions
	Knowledge Representation	2 sessions
Period III	Project Disertations	2 sessions

Table: Schedule for Period II & III

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Grades Percentages

Period	Item	Percentage
Period I	Assignments	5%
	Workshops	20%
	Test	10%
Period II	Assignments	5%
	Workshops	20%
	Test	10%
Period III	Paper + Poster	5%
	Technical Report	10%
	Course Project	15%

Table: Systems Analysis Grades Distribution

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Don't hate the player, hate the game

- All asignments must be submitted hand-written on **time** and in **english**. Grammar and spelling will **not** be evaluated.
- Copying and pasting from internet is **forbidden**. Please, **develop** your own solutions.
- Class attendance is **not mandatory**. If you **miss** classes, you must *study by yourself*.
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Code of Conduct

- Always be **respectful** to your classmates and to me. You must be **kind** with everyone inside (*and outside*) the classroom.
- There is no a better programming language, tool, or technology. There are only **better** or **worse** solutions.
- You must be **honest** with your work. If you don't know something, just **ask** me. I will be glad to help you.
- You must be **responsible** with your work. If you don't submit **on time**, please don't cry.
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Bibliography

Recommened bibliography:

- **Systems Analysis and Design**, by Alan Dennis, Barbara Haley Wixom, and Roberta M. Roth.
- **Systems Analysis and Design**, by Kenneth E. Kendall and Julie E. Kendall.
- **Systems Analysis and Design**, by Scott Tilley and Harry J. Rosenblatt.
- **Systems Analysis and Design**, by Gary B. Shelly, Harry J. Rosenblatt, and Thomas J. Cashman.

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Thanks!

Questions?

www.linkedin.com/in/casierrav

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