SERGIO RODRÍGUEZ

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Education

B.S in Computer Science   University of California-Riverside / University Carlos III of Madrid   June 2025
- **Relevant Coursework** : Calculus I & II, Linear Algebra I & II, Discrete Mathematics, Python Programming, Introduction to Data Science, Numerical Methods, Probability And Statistics, Statistical Modeling, Signals And Systems, Signals Statistics, Data Structures and Algorithms, Computer Networks, Databases, Data Protection & Cyber Security, Machine Learning I & II, Automata and Formal Languages, Deep Learning, Combinatorial Optimization Algorithms, Introduction to Big-Data Management, Data Science Ethics, Computer vision, Introduction to Natural Language Processing, Principles of Web Development.

Technical Skills

Programming Languages: Python, Java, SQL, R, Matlab.
Database: Oracle, MongoDB, Microsoft SQL Server, MySQL.
Operating Systems: Windows, MacOS, Linux.

Projects

Senior Design Project

Recycling Deep Learning Model |**Github link**
- Starting from a database of waste images, programming with Python a **deep learning** model that identifies the type of waste in a photo uploaded by the user, and assigns it to a specific bin.
- Data preprocessing, creation, and comparison of several different neural networks, and using the most effective one to create a function that identifies the waste and assigns it to its corresponding bin.

Pacman Game Design |**Github link**
- Collaborated with 1 team member to design a Pacman game, allowing players to play as in the original game, with different maps and characters.
- Used **Machine Learning** to make pacman able to eat all the ghosts and as many points as possible in the shortest way with the maximum reward on his own, depending on the map and the position of each ghost at each moment.
- Utilized **Python and Windows Operating System** to create the game and implement the intelligent pacman.
- Created a user-friendly interface for input and display, including different maps to play and visualizing the game in 2D.
- Performed the design for all maps and ghosts.

Mario Bros Game Design |**Github link**
- Collaborated with 1 team member to design a Mario Bros game, allowing players to play as in the original game, with different maps and characters.
- Utilized **Python** to implement the game logic including Mario Bros movements, enemies, rewards, special objects of the game and command lines.
- Created a user-friendly interface for input and display, including different maps to play and visualizing the game in 2D.
- Performed all the development of the code, as well as the code testing and resolved bugs. Moreover, the characters design and maps.

Leadership Experience

Peer Mentor   Universidad Carlos III de Madrid
- Guide and support 1st and 2nd-year undergraduate students in subjects of Statistics, Databases and Python.
- Teach and give extra classes to last year high school students about Mathematics and Physics.