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Rubén Pérez

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EDUCATION

- **University of Granada** — Granada, Spain
  MSc in Data Science and Computer Engineering. — Sep. 2023 – Present
- **University of Cádiz** — Cádiz, Spain
  BSc in Computer Science; GPA: 8.83/10 — Sep. 2019 – Jul. 2023
  - Achieved 7 Honorific Mentions (some in core subjects like Algebra, Databases, Computer Networks or the Bachelor's Thesis).
  - I was a Student Assistant in the Computer Science Department for two academic years (2021/22 and 2022/23).
  - Led a group of incoming students in the Welcome Days of the 2021/22 academic year.

EXPERIENCE

- **University of Cádiz - RoBDa** — Cádiz, Spain
  Full-stack Developer — Aug. 2022 – Jul. 2023
  - Designed and developed a community-based learning platform for the students of the Databases course in collaboration with the Software Process Improvement & Formal Methods research group (SPI&FM, TIC-195).
  - Implemented an API REST in Django (Python) and a PWA in NextJS.
  - Deployed the project on a Rocky Linux server.
  - With this project, I received the Departmental Collaboration Scholarship from the Spanish Ministry of Education in the 2022/23 academic year.
- **University of Cádiz - ChatbotSQL** — Cádiz, Spain
  Full-stack Developer — Oct. 2021 – Jul. 2022
  - Enhanced, deployed and maintained a legacy Laravel (PHP) platform to learn SQL, previously created by the SPI&FM research group. It used a NodeJS API connected to an IBM Watson Assistant instance to help the students with the exercises. In the first year, more than 70 students used the platform, and we fetched data from over 2400 attempts (9400+ queries).
  - Revamped the query validation methods to incorporate support for nested and join queries. 93% of the students had a positive opinion about the assistance provided for these queries.
  - Redesigned the lecturer dashboard and implemented a data export feature, enabling lecturers to perform offline analysis of the recorded data.
  - Created a new game mode (Playground Mode) to freely practice SQL queries, recording 160+ attempts per year.
  - Authored two academic articles detailing its impact on educational experience through technological innovation.

PROJECTS

- **Sudoku Player** Sudoku player with image and audio recognition in MATLAB. Sudokus are scanned using the webcam, and each insertion or deletion is given by voice or image. It integrates a user-friendly GUI.
- **Search Engine** Developed a Java-based search engine that employs efficient indexing and searching techniques. I implemented algorithms for text tokenization and result ranking to enhance search performance.
- **C to Assembly Translator** C translator to assembly (x86) using the SLY module in Python along with a nice and interactive GUI for the user. I designed and created the grammar to accept a subset of C.

AWARDS

- First Place in the IX edition of the Regional Multisite AdaByron Competitive Programming Contest (2023).
- Outstanding Student Award in Computer Science (University of Cádiz, 2023).
- Athenaeum-UCA Chair Award (Athenaeum of Cádiz, 2023).

SKILLS

- **Languages:** Spanish (Native), English (B2 FCE), French (Elementary)
- **Programming Languages:** C/C++, Java, Javascript, Python, MATLAB, R, Scala.
- **Software:** Git, React, MySQL, MongoDB, Tensorflow, Spark, Hadoop.
- **Certifications:** Particle Physics: an Introduction (Coursera), MongoDB Associate Developer (MongoDB), Data Analyst Path (Google Cloud), Associate Cloud Engineer Learning Path (Google Cloud), CCNA: Introduction to Networks (Cisco), Machine Learning with Python (freeCodeCamp).

PUBLICATIONS

- Pérez-Mercado, R., Balderas, A., Muñoz, A., Cabrera, J.F., Palomo-Duarte, M., & Dodero, J.M. (2023). ChatbotSQL: Conversational Agent to support Relational Database Query Language Learning. SoftwareX, 22, 101346. DOI: 10.1016/j.softx.2023.101346 [JCR]

- Pérez-Mercado, R., Balderas, A., Muñoz, A., Cabrera, J. F., Palomo-Duarte, M., Dodero, J. M. (2023). ChatbotSQL: Agente Conversacional y Plataforma Web para el Aprendizaje de SQL. In: Durán Toro, A. (Ed.), Actas de las XXVII Jornadas de Ingeniería del Software y Bases de Datos (JISBD 2023). Sistedes. URL: https://hdl.handle.net/11705/JISBD/2023/1971