Raúl Beltrán Gómez

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EDUCATION

University of Havana   **Havana, Cuba**

Bachelor of Computer Science   Expected 23/01/2024

- **Average Classification:** 4.0 / 5.0
- **Relevant Coursework:** Design and Analysis of Algorithms, Data Structure Analysis and Algorithms, Graph Theory, Number Theory, Artificial Intelligence and Machine Learning, Information Retrieval Systems, Compilers, Operating Systems, Databases and Software Engineering, Distributed Systems, Networks, Language Theory, Algebra.

WORK & LEADERSHIP EXPERIENCE

Word Games   **Bogotá, Colombia**

Game developer, Development Team   20/10/24 – 10/05/25

- Developed two major projects: Arcane Ascent, a deck-building roguelike game launched on Steam Early Access where I implemented all programming and Unity engine functionalities, and an innovative automated language system integrating NLP with OpenAI for real-time generation of new languages.
- Selected Project Experience:
  - Arcane Ascent
    - Led the complete development of the game from scratch, implementing all programming mechanics and Unity engine systems, resulting in a successfully published title on Steam Early Access.
    - Created new methods for integrating native Steam features such as achievements and saving system, significantly improving user experience and enabling successful game publication on the platform.
  - Language Generation System
    - Analyzed and developed an innovative system utilizing NLP and OpenAI API to automatically create new languages for the game, implementing a robust communication system between Python and Unity using JSON that enables dynamic importing/exporting of languages to/from the game engine.

Devman   **Madrid, Spain**

NLP, Chatbot and API Rest developer, Backend Development Team   20/02/24 – 14/06/24

- Architected and developed a comprehensive e-commerce chatbot solution combining NLP and product retrieval systems, featuring efficient product discovery through natural language processing and streamlined customer communication.
  - Chat Bot Assistant
    - Led the development of an enterprise-grade chatbot assistant for e-commerce platforms, implementing sophisticated NLP capabilities using OpenAI integration and Typesense-based product retrieval system, resulting in significant improvements in customer engagement and product discovery efficiency.
  - Backend Infrastructure
    - Designed and implemented a robust FastAPI-based REST architecture, creating a secure authentication system with API key management, implementing WebSocket protocols for

real-time chat interactions, and developing comprehensive authorization frameworks to ensure reliable and secure customer-bot communications.

Educational Projects   **Havana, Cuba**
Computer scientist student, University of Havana   10/09/19 – 17/01/24

- Image Retrieval System: implements an innovative approach using SAM segmentation models and CLIP for generating multimodal embeddings, allowing for precise image searching through advanced processing of visual and linguistic features.
- Cool Compiler: represents a comprehensive development that translates the Cool language to MIPS code, implementing a complete compilation flow encompassing syntactic analysis, semantic analysis, and code generation, using CIL as a bridge between both languages to ensure optimal translation.
- Audio Classification System: develops multiple machine learning approaches to categorize music into predetermined genres, exploring various feature sets extracted from tracks, ranging from Mel-frequency cepstral coefficients (MFCC) and direct audio signals to less conventional features such as song lyrics and wavelet transforms.
- Distributed FTP System: implements a distributed file transfer protocol that utilizes the Bully algorithm for effective node coordination, enabling robust and decentralized file system management across the network.
- Algorithm Design and Analysis project: focuses on designing and optimizing algorithmic solutions, applying advanced dynamic programming and graph theory techniques, accompanied by formal proofs verifying the optimal complexity of each proposed implementation.
- NavMesh Multiagent System: develops an artificial intelligence environment in Unity where multiple agents interact autonomously, characterized by independent behavior and local system vision, operating under a decentralized model without centralized control coordinating the global behavior of the entire agent ensemble.
- Text Retrieval System: integrates various advanced information processing techniques, combining vector models with Latent Semantic Analysis (LSA) and Vaswani attention mechanisms, complemented by Trie structures for efficient indexing and document grouping, significantly improving accuracy in textual information retrieval.

SKILLS, ACTIVITIES & INTERESTS

Languages: Fluent in Spanish; Conversational mid-level in English (B1).
Programming Languages: Python, C#, Assembly (MIPS), C, C++, Rust, Prolog, Haskell, JavaScript, Dart, Go.
Technical Skills: Unity Engine, Fast API, Model Context Protocol(MCP), .NET, ReactJS, Flutter, Databases, API Rest, Tensorflow, Pytorch, Machine Learning APIs.
Markup Languajes: LaTex, Jupyter Notebook, Markdown, CSS, HTML.
Interests: My professional interests lean towards number theory, graph theory, and the development of solutions in the field of machine learning and artificial intelligence. I am open to working on projects that require both frontend and backend development, as well as game development.

PROFESSIONAL PROFILES

Github: https://github.com/rb58853
Portfolio: https://rb58853.github.io/CV