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PROFESSIONAL PROFILE

Bilingual Software Developer and Computer Science Student with a strong background in electronics, robotics, machine learning, and AI. Skilled in full-stack development, API design, and deployment. Passionate about bridging theory with real-world applications of emerging technologies such as LLMs, RAG, and NLP. Adaptable, team-oriented, and eager to drive innovation through continuous learning and collaboration.

AREAS OF INTEREST

Artificial Intelligence

- Generative AI
- Natural Language Processing
- Reinforcement Learning

Software/Web Development

- Full-Stack Apps
- API Design
- Cloud Services

Research & Innovation

- AI Ethics and Safety
- RAG Methods
- Emerging Tech

EXPERIENCE

- **Software Developer** *Remote, Wyoming, USA*
Straico May 2024 - Present
  - Developing front-end (React) and back-end services to integrate AI models into production environments.
  - Implementing robust APIs for seamless communication with large language models and RAG pipelines.
  - Deploying microservices architectures on AWS to improve scalability, handling high-traffic use cases potentially involving millions of requests.
  - Optimized performance and reliability for enterprise-level clients, ensuring minimal latency and fault tolerance in production.

- **Lead for AI & Robotics Research** *Bogotá, Colombia*
SinfonIA Uniandes Apr 2023 - 2025
  - Led advanced research and development of machine learning approaches, including LLMs, fine-tuning, NLP, computer vision, neural networks, and reinforcement learning.
  - Enhanced Pepper robot interactions using ROS and MoveIt, focusing on robotic manipulation and intelligent decision-making.
  - Oversaw the group's official website (Angular) to showcase ongoing projects and foster external collaboration.
  - Promoted VR/AR applications for research testing and educational demos in robotics and AI.

- **XR Application Developer** *Bogotá, Colombia*
Oasis Feb 2024 - Jun 2024
  - Built Unity/C# training applications for emergency responders, focusing on immersive learning.
  - Collaborated with a cross-functional team to integrate XR technologies into product development.

- **Teaching Assistant & Frontend Developer** *Bogotá, Colombia*
Universidad de Los Andes Jan 2022 - Dec 2023
  - **Teaching Assistant & Grader (Multiple Courses)**
    * Intro to Electrical and Electronic Engineering (Aug 2022 - Dec 2023): Supported instructors in workshops, labs, and classes; guided students, resolved doubts, and coordinated materials. Assisted in SDG-related projects.
    * Robotics Learning Course (Jun 2023 - Jun 2023): Focused on machine learning and robotics labs; facilitated equipment coordination, led installation/maintenance of Ubuntu, ROS, PyTorch, CUDA, and MoveIt.
    * Society 5.0 Course (Jan 2022 - Jun 2022): Assisted in IoT-based projects, sensor management, and data transmission; reviewed assignments, managed evaluations, and provided weekly support.
  - **Frontend Developer (Jan 2022 - Jun 2022)**
    * Oversaw management and updates of the department's website, publishing content via HTML, CSS, and JavaScript.
    * Enhanced website accessibility and user usability through continuous improvements and best practices.

FEATURED PROJECTS

• **Customizable AI Agents Platform** *Featured Project*

Developed advanced AI agents integrated with the Straico API and an evolving visual interface.

- Engineered agents with diverse capabilities, allowing users to choose and customize commercial models as well as dynamically assemble and disassemble information.
- Led research, development, and iterative improvements to achieve optimal performance and adaptability.
- Utilized NLP, embeddings, various LLMs, APIs, NoSQL databases, microservices in Python, API integration in Node.js, and thorough testing with Postman among other technologies.

• **AI-Driven Image Generation & Editing Platform** *Featured Project*

An advanced system leveraging OpenAI's Function Calling and Ideogram API to create, edit, and describe images.

- Implemented automated mask generation and context-aware processing for efficient AI-driven workflows.
- Enhanced user experience through seamless integrations with existing web services.

• **Smart Templates Application** *Featured Project*

Detecting similarities in user queries and generating structured templates via OpenAI embeddings.

- Implemented a system to analyze query relationships, improving template suggestions for related inquiries.
- Created intuitive visualizations (graphs) for clarity on connections between user queries.

• **Personal Portfolio & Additional Projects** *Web & IoT Endeavors*

Modern Full-Stack Portfolio (React/Node.js) deployed on custom domain + GitHub

- Showcases responsive design, solid UI/UX principles, and code quality in both client (React) and server (Node.js).
- Demonstrates continuous deployment and integration with microservices on AWS for high availability.
- Includes Next.js experimentation for server-side rendering (SSR) and improved performance.

EDUCATION

• **Universidad de Los Andes** *Bogotá, Colombia*
B.S. in Computer Science Jan 2021 - Dec 2025 (Expected)

• **Universidad de Los Andes** *Bogotá, Colombia*
B.E. in Electronic Engineering Jan 2021 - Dec 2025 (Expected)

• **TEC de Monterrey** *Monterrey, Mexico*
Minor in Data Analytics and Artificial Intelligence Jul 2024 - Dec 2024

CERTIFICATIONS

• **Fundamentals of Deep Learning**
NVIDIA Feb 2024

• **Google Cloud Certifications** *(Multiple Credential IDs)*
Google Cloud Skills Boost Apr 2023

AWARDS

• **Participant in RoboCup 2024 Competition - Eindhoven**
RoboCup Federation Jul 2024

- Represented Universidad de Los Andes in the RoboCup 2024 Competition, highlighting robotics and AI skills.

• **First Place in RoboCup @Home - Social Standard Platform League**
RoboCup @Home Jul 2024

- Led the SinfonIA team to secure first place, demonstrating excellence in Pepper robot social interactions.
- Contributed major enhancements to robotic functionalities through strategic use of AI.

Skills

Languages: Native Spanish, English (B2), French (A1)

Programming: Python, Java, C/C++, JavaScript & TypeScript, HTML & CSS, C#, MATLAB, Assembly

AI/ML: PyTorch, TensorFlow, CUDA, LLM usage (fine-tuning, prompt engineering), RAG, NLP

APIs & Services: Generative AI/LLM APIs (OpenAI, Hugging Face), diverse cloud AI services (AWS, GCP)

Web/Frameworks: Angular, React, Next.js, Node.js, Django, Spring, ROS

Cloud/Databases: AWS (EC2, S3), Google Cloud, SQL, MongoDB

Operating Systems & Tools: Linux (Ubuntu/Debian), Windows, SSH, Docker, Git/GitHub, Arduino, Postman, VS Code, Unity, LaTeX

Soft Skills: Teamwork, Adaptability, Creative Thinking, Communication, UI/UX Focus

References

Available upon request.