Cesar Andres Salazar Pereira

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Profile

I am a Computer Science Master's student at Texas A&M University focused on AI-powered tools, data systems, and smart agriculture. Passionate about building intelligent mobile and web platforms using cloud services, LLMs, and embedded technologies, I bring a strong foundation in full-stack development with international academic and project experience.

Education

Texas A&M University   *College Station, TX, USA*
Master of Science in Computer Science   *Jan 2024 – present*
- GPA: 3.7/4.0

Universidad Privada de Santa Cruz de la Sierra   *Santa Cruz, Bolivia*
Bachelor of Science in Systems Engineering   *Jan 2018 – May 2023*
- GPA: 3.7/4.0

Experience

Graduate Research Assistant   *College Station, TX, USA*
Texas A&M University – AgriLife Research   *Jan 2024 – present*
- Conducting research on AI-powered agricultural systems under Dr. Juan Landivar's guidance, focusing on crop analytics, and virtual assistants.
- Leading development of the Dr. Cotton platform, integrating mobile apps, REST APIs, and conversational agents.
- Applying large language models (LLMs), digital twin modeling, and geospatial visualization for crop growth prediction and resource optimization.
- Supporting academic publications, conference presentations, and stakeholder demonstrations as part of research outreach.

Software Project Manager   *Santa Cruz, Bolivia*
Universidad Privada de Santa Cruz de la Sierra (UPSA)   *Aug 2022 – Dec 2023*
- Developed and deployed an earthquake alert app using ASP.NET, enabling real-time reports for users in the rural areas.
- Led the coordination of the "PromoUPSA" activity in the Engineering Department at the university's annual showcase, overseeing cross-functional teams and delivering a cloud-backed mobile game.
- Supported coordination and logistics for engineering outreach events such as "Engineer for a Day" and civil engineering competitions, helping with organization and technical support.
- Designed and implemented a real-time earthquake simulation platform using pneumatic actuators and sensors, along with a control app to visualize platform acceleration.
- Built and deployed the TecnoUPSA judging system in ASP.NET MVC, allowing professors to vote on student projects — hosted and published on Microsoft Azure.
- Collaborated on the Fenamaz disaster reporting app using Flutter (frontend) and ASP.NET (backend).

Odoo Implementation Consultant   *Santa Cruz, Bolivia*
Technosys S.A.   *Mar 2022 – June 2022*
- Customized and implemented Odoo ERP across departments, reducing manual processes.
- Liaised with stakeholders to understand business needs and configure workflows accordingly.
- Collaborated within a cross-functional team to troubleshoot and optimize ERP modules.

Software Engineering Intern   *Santa Cruz, Bolivia*
CRE R.L.   *Dec 2021 – Mar 2022*
- ○ Designed and built asset control software using C#, ASP.NET, and SQL Server, deployed in production.
- ○ Implemented a notification system that automatically alerted users of upcoming equipment loans deadlines.
- ○ Worked alongside senior engineers to ensure security and maintainability of the system.

Skills

Programming Languages: C#, Java, C++, Python, Dart, JavaScript, TypeScript, SQL

Frameworks & Libraries: ASP.NET Core, Flutter, Arduino, Spring Boot, React, FastAPI, Entity Framework, REST APIs

DevOps & Tools: Git, Docker, GitHub Actions, Firebase, Hangfire, PlatformIO, SQL Server Management Studio

Cloud & Platforms: AWS, Oracle Cloud, GitHub Pages, Heroku, Microsoft Azure

AI & Data Science: LLMs, Digital Twins, Data Analysis

Languages: Spanish (native), English (fluent, TOEFL iBT & ITP certified), German (learning)

Embedded Systems & Hardware: ESP32, Arduino, sensors, actuators, microcontrollers, networked devices

Research and Technical Projects

Dr. Cotton Platform   *May 2024 – present*
Modular AI-powered platform for smart cotton farming — combining chatbot interaction, predictive analytics, and data visualization.
- ○ Built with Flutter, Django REST, and RASA for mobile, backend, and chatbot modules.
- ○ Displays canopy features, PGR recommendations, yield predictions, and irrigation suggestions.
- ○ Deployed with Docker, supports role-based access.

Smart Resume Parser   *Feb 2025 – Apr 2025*
End-to-end resume parsing and job recommendation system with interactive dashboard, powered by AI skill extraction and data visualization.
- ○ Uses FastAPI, Gemini Flash, SBERT, and React for parsing and matching resumes to jobs.
- ○ Features skill word clouds, match reasoning, and salary analytics.
- ○ Built for CSCE 679 Data Visualization at Texas A&M.

GT Malware Classifier   *Sept 2024 – Nov 2024*
Machine learning-based PE file malware classification with feature extraction and real-time API deployment.
- ○ Uses LIEF for PE feature extraction and Scikit-learn models (Random Forest, GBoost).
- ○ Dockerized Flask API provides real-time classification via endpoint.
- ○ Implements metrics evaluation, and JSONL/CSV handling.

Experiencia FAI   *Apr 2023 – May 2023*
Interactive educational game simulating earthquake response, developed for the Facultad de Ingeniería at UPSA.
- ○ Developed in Flutter + ASP.NET Core with WebSocket sync and QR group management.
- ○ Includes Raspberry Pi safe-zone integration and timed scenario simulations.
- ○ Used during university promotion events to teach emergency response.

Fenamaz   *Feb 2023 – Dec 2023*
Real-time natural disaster information and citizen reporting app powered by official and community-sourced data.
- ○ Built in Flutter with REST API integration from official and own sensor sources.
- ○ Includes map views, earthquake/fire/weather alerts, and offline cache.
- ○ Users can report unlisted events for broader awareness.

Tiluchi
Dec 2023 – Jan 2024

Web application for managing a real estate franchise, including property listings, agents, clients, and agreements.
- Supports listing management, client-agent assignments, and legal agreements.
- Streamlines operations across franchise locations.

TecnoUPSA Judge
May 2023 – May 2023

Web application for managing and judging the annual TecnoUPSA event at UPSA.
- ASP.NET MVC system for secure voting, ranking, and admin panel management.
- Used for real-time evaluation of student projects and CSV report generation.

StackO Rail + StackO Remote
Jan 2022 – May 2023

ESP32-powered macro rail and companion app for focus stacking photography.
- Wireless control with Flutter frontend and mDNS API over WiFi.
- Custom PCB, 3D-printed case, DoF calculator, and multiple operation modes.
- Designed for high precision macro photography automation.

Guajojó — Equipment Control System
Jan 2022 – Mar 2022

Asset management system for CRE R.L. to track equipment loans, donations, and technical repairs.
- Developed with .NET 6 and Blazor Server, using Entity Framework Core and SQL Server.
- Supports file uploads, audit logs, email notifications, and Windows authentication.
- Used Hangfire for background tasks, Audit.NET for change tracking, and Serilog for logging.

VacunaCheck - Bolivia
Sept 2021 – Dec 2021

Mobile app to validate Bolivian vaccination certificates quickly and securely via QR scanning.
- Flutter app that queries official government site in real time.
- Fully open-source and privacy-focused — no data collection.
- Used on campus during pandemic restrictions.

Publications and Conferences

Dr. Cotton: An Interactive Chatbot for Cotton Crop Management
Apr 2025

Cesar Andres Salazar Pereira, Jose Luis Landivar, Pankaj Pal, Juan Landivar-Bowles, Mahendra Bhandari, Yuri Calil, Luis A. Ribera

cesarsp.com/projects/dr-cotton/dr-cotton-msu-poster.pdf (AI in Agriculture Conference, 2025)

Aggie-Digital-Twin Powered Agricultural Intelligent Virtual Assistant
Nov 2024

Cesar Andres Salazar Pereira, Pankaj Pal, Juan Landivar-Bowles, Mahendra Bhandari, Luis A. Ribera
scisoc.confex.com/scisoc/2024am/meetingapp.cgi/Paper/162229 (ASA-CSSA-SSSA Annual Meeting, 2024)

Certifications

Basic Professional Development Certificate
Texas A&M University
Apr 2025

Issued by the G.R.A.D. Aggies Professional Development Initiative

RCR Basic
CITI Program
Aug 2024

Credential ID: 64314727

GitHub Foundations
GitHub
July 2024

Expires July 2027

TOEFL iBT
ETS
July 2023

Valid until July 2025 — Skills: English as a Foreign Language

AWS Academy Graduate — AWS Academy Cloud Foundations
Amazon Web Services
Dec 2022

Skills: AWS Cloud Services

TOEFL ITP
ETS

Skills: English as a Foreign Language

Interests

Interests: Photography (macro and wildlife), Minecraft modding, language learning, traveling, cooking, and creative technology tinkering