José Manuel Cortés Cerón — IoT, AI & Software Engineer

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Education

Programming Technician (SEP – CETis 026) Completed July 2023

B.S. in Information and Communication Technologies – Instituto Tecnológico Superior del Occidente del Estado de Hidalgo (ITSOEH) 2023 – Present

Professional Experience

Technology Workshop Instructor 2023 – Present

- Delivered specialized workshops on AI applied to social media, programming (OOP, structured, and functional), data analysis with Tableau, and AI in cybersecurity, demonstrating effective communication and leadership skills by training diverse audiences.

Technology Conference Speaker 2024

- Presented at academic events such as Expo Profesiográfica and CONAINTE, sharing knowledge on AI and technology trends to inspire young talent to pursue careers in Information Technology.

Key Academic Achievements 2023 – 2024

- Winner of the Intercollegiate Programming Rally held at ITSOEH, demonstrating advanced algorithmic problem-solving skills under pressure and teamwork.
- Special guest at the Byron Gálvez homage at ITSOEH, presenting digital museum projects developed to preserve his legacy.

Technical Projects

- **Arm Health AI (XJTLU, China):** Development of a predictive health platform for a robotic arm using AI; integrated an LSTM model for Remaining Useful Life (RUL) prediction with a 3D digital twin interface, implementing secure communication protocols for data transmission.

- **Smart Lettuce Crop:** IoT system for smart agriculture (lettuce cultivation), featuring environmental monitoring via Arduino (DHT22 sensor), electromagnetism research in agriculture, and a Java (Swing) application for data visualization, incorporating AES encryption for data protection and integrity.

- **Java Tutor Dash:** Development of a real-time educational dashboard using Firebase (backend) and JavaScript (frontend), integrating CI/CD pipelines for continuous deployment and facilitating student progress tracking in Java courses.

- **Museo Virtual Byron Gálvez:** Full development of an interactive digital museum as part of the paper *Hybrid Architecture for Intercultural Preservation: Digital Resurrection and Stylistic Propagation of Byron Gálvez's Legacy.* Technologies used: Three.js, WebGL, JavaScript, Firebase.

- **RepairSuite-SGTL:** Modern repair shop management platform. Features an interactive dashboard, real-time KPIs, and modules for service orders, inventory, sales, clients, staff, and suppliers.

Technical Skills

- **Programming Languages:** Python, C/C++, Java, JavaScript, C#, SQL.

- **AI/ML:** LSTM, RUL Prediction, Whisper, LLMs, Pyttsx3, SaaS, Signal Processing, Data Pipelines.

- **IoT:** Arduino, ESP32, Node-RED, MQTT, Raspberry Pi.

- **DevOps & Infrastructure:** Linux (Rocky, Debian), Docker, Kubernetes.

- **Software & Frameworks:** Git, GitHub, Firebase, React, Android Studio, Tailwind, NextJS, Three.js, MySQL.

- **Robotics:** VEXcode, Firmware, Kinematics, Electrical Optimization, PID Control.

Certifications

- Certification in ChatGPT Usage – Santander X (May 2025).

- Certification in Strategic Thinking and Personal Branding (June 2025).

- Data Science Essentials Certification – Cisco Networking Academy (2024).

- Internet of Things (IoT) Certification – Cisco Networking Academy (2024).

- Linux Server Administration Certification (Rocky Linux & Debian) (2025).

Languages

Spanish (Native); Technical English (Intermediate).