



# BRAYAN CASTRO

## MECHATRONICS ENGINEER

To be a well-rounded professional, always giving my best in every project and stage of my professional life, continuously preparing and improving myself. To be a member of a company where I can demonstrate and develop my skills and abilities, creating a growth impact within the company and the surrounding society.



### CONTACT

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### LANGUAGES

Spain	<div></div>	100%
English	<div></div>	80%



### TECHNICAL SKILLS

**FULL STACK DEVELOPMENT**

- Experience in PHP, JavaScript, React, Node.js, and MySQL to create web applications from concept to production.

**HARDWARE DEVELOPMENT**

- Leadership in the design and manufacturing of electronic hardware for sensor data acquisition, PCB design, and fabrication.

**IT INFRASTRUCTURE MANAGEMENT**

- Advanced server management with CPanel and cloud service administration on AWS, including instance launching and application deployment.

**IOT SYSTEMS DEVELOPMENT**

- Design and development of client-server systems and control systems using Python, Java, and microcontrollers (Arduino, PIC, Raspberry).



## EDUCATION

**Bachelor's Degree in Mechatronics Engineering, ITESM-CSN (2008 - 2013)**

- General average of 97.2. Graduated with honors for the highest GPA in the class.

**Technical Degree in Computer Science, CETIS 108 (2005 - 2008)**

- General average of 100.0
- Winner of two international projects.



## EXPERIENCE

**IoT Platform for Signal Acquisition and Load Management (2024 - Present)**

- Leading the development of an innovative IoT platform for signal acquisition and analysis from various sensors. This involves designing and manufacturing hardware and electronic boards, and integrating AI and chatbots for dynamic user interfaces and automated device control. My role includes:
- Designing and Producing Custom PCB Boards:
- Determine the specifications and requirements for the PCB boards based on sensor data needs.
- Create detailed schematics and layouts for the PCB design, ensuring optimal performance and reliability.
- Developing Firmware for Microcontrollers:
- Write and test firmware code to ensure reliable data collection and transmission from sensors.
- Optimize firmware for low power consumption and efficient data processing.
- Configuring and Deploying Backend Infrastructure: Set up and configure AWS services to handle large volumes of sensor data efficiently.

**Neerd E-Learning - AI Software Developer, Hermosillo (2023 - 2024)**

- React for Visualizations and Dashboards: Developed and implemented interactive visualizations and dashboards using React. These tools provided real-time data insights, enhancing user experience and decision-making capabilities.
- API Integration with OpenAI: Managed the integration of OpenAI's API to process information from a database hosted on AWS. This integration was guided by methodologies studied by expert psychologists, resulting in highly effective outcomes.
- Vocational Guidance Platform: Created an interactive platform for vocational guidance, incorporating AI algorithms to provide personalized career recommendations. Utilized Node.js for backend logic and React for a reactive frontend, with the entire system hosted on AWS.



## SOFT SKILLS

### ROOT CAUSE ANALYSIS

- Experience in identifying and resolving product, component, and assembly failures.

### TECHNICAL SUPPORT

- Troubleshooting software and hardware issues, and performing scheduled tasks.

### CREATIVITY AND INNOVATION

- Creative problem-solving skills for technical challenges

### SELF-MOTIVATED

- Self-directed with a strong capacity to learn new technologies and adapt to rapid changes.

### LEADERSHIP AND TEAMWORK

- Ability to lead teams and guide projects to successful completion.

### Purp - Warehouse Inventory Management Software (2022)

Developed an online system for managing pallets and lots in a grain and seed warehouse, optimizing administration and storage conditions.

- Initial Development Stage: The first stage of the system was developed using PHP, MySQL, and HTML to handle the registration and management of information. This foundational phase ensured accurate and efficient data entry and storage.
- Integration of JavaScript for Visualizations: Subsequently, JavaScript was integrated into the system to enhance data visualization capabilities, providing users with dynamic and interactive charts and reports that facilitated better decision-making and operational oversight.
- Deployment on Webempresa CPanel: The entire system was deployed on Webempresa's CPanel hosting platform, ensuring a stable and secure environment for the application's operation and accessibility.

### La Misión - Taxi Reservation Platform, Los Cabos (2023)

- Developed a complete system for taxi reservations using PHP and JavaScript for backend and frontend, respectively, with MySQL for database management. Implemented essential functionalities for booking, tracking, and managing vehicles.

### La Joya - Real Estate Management Software (2021)

- Developed an online system for managing land and real estate, allowing the creation of subdivision projects on a digital map, generating contracts for groups of lots, and providing a point of sale for installment payments.

### Beekeeping Monitoring System (2018)

- Developed a control and communication unit for remote monitoring of queen cells, collecting data on internal cell temperature, ambient humidity and temperature, and honey production weight, with GPS data sent via internet (GPRS) to a server for analysis.

### LED Technology Development, S.A. de C.V. (2017)

- Participated as a consultant in the development of devices for UV activation and chitosan biofilm application for disinfecting meat products in TIF plants.

### Metatronic LED.MX (2014-2016)

- Technical project manager for advanced home automation systems, developing products for home automation, including switches, sockets, presence sensors, RGB lighting control, and voice control systems.

### Trax Construction (2015)

- Participated in a project for wireless technology to improve energy efficiency and safety in mining and construction, developing electronic designs and configuring wireless networks for toxic gas sensors.

### R-COM Engineering Solutions (2014)

- Developed control, communication, and power stages for an intelligent on-demand water heater system, designing PCB and enclosure files, and a basic control and test app for signal monitoring and mode configuration.

### Professional Internship at Xantronic S.A. de C.V. (2013)

- Participated in the development of adaptive LED automotive headlights for off-road vehicles, based on an array of high-power LEDs with intelligent control to modify light patterns according to terrain topography and vehicle direction.