

Pedro Luna

IoT developer



✉ clutso@hotmail.com

Professional with over 6+ years' experience on IoT systems delivered as cloud services and as E2E solutions. I've assumed leadership roles on multinational teams designing and delivering new features for LoRa cloud services. My biggest passion is to contribute on the creation of next generation technology, I'm a continuous learner, "out of the box" thinker and a team player.

I Invite you to take a look to [my personal projects](#):

<http://www.pedrogoiot.com>
<https://github.com/clutso>

Available to relocate nationwide

Technical skills

IoT protocols:	LoRa, Zigbee, Sigfox, BLE and WiFi HaLow
Programing languages:	Go, Python, C/C++, Java and Scala
Frameworks and supersets:	Arduino, .NET, Vue, Angular, Node-JS and Typescript
Cloud Integrations with:	AWS, GCP, Azure, Geolocation services.
Interpreters and CLI:	Linux Bash scripting, Windows scripting, HTML, CSS, PowerShell, Cisco IOS
Additional skills:	Software develop, Network administration, Linux and windows administration, IT corrective and preventive maintenance, IT Support and administration.

Spoken languages: English Fluent German Intermediate Spanish Native

Relevant Projects and Achievements

2018 - 2020

Personal projects

- Published "[Design and Implementation of a Node Geolocation System for Fire Monitoring through LoRaWAN](#)" on *2020 IEEE International Autumn Meeting on Power, Electronics and Computing (ROPEC 2020)* . (In process to be published on [IEEE Xplore digital library](#))
- Designed *COVID19 Real-time monitor*, an end to end solution, winner of the 2020 IEEE-Hacktech-COVID19 event. This solution combines LoRa WAN protocol, cloud computing, and data analytics to identify possible cases of covid19 among the population, track and learn patterns of infected people that lead to actions for containing the virus propagation. -- Solution architect -- Selected the sensors for the end device. -- Designed the end device solution. -- Designed the data pipeline, which collects data from a diagnosis questionnaire and end devices sensors. -- International experience, collaborated with team members of Peru, Colombia and Mexico.
- Created "*Fire Monitor*" (<http://www.pedrogoiot.com/firemonitor>), an end to end solution that consist on a LoRa Wireless sensing network (WSN) that measures CO, temperature and humidity levels to identify possible fire situations on open areas: -- Programmed embedded software for sensing devices. -- Designed, configured and deployed the LoRa WAN network. -- Designed and deployed the data pipeline. -- Integrated the cloud services for the data pipeline. -- Developed an application written in Go that consumes real-time data from The Things Network (TTN), calculates the probability of a fire emergency, calculates the position (Lat, Long) of the device that has reported a fire incident and send e-mail notifications. -- Developed a web interface for data representation, which displays the data of an end device into a dashboard and a map.
- Deployed a "*LoRaWAN network on Universidad Panamericana campus Aguascalientes*". -- Installed infrastructure. -- Configured the middleware (Kerlink Solution with embedded Linux OS). -- Programmed end devices (SODAQ Explorer boards) -- Integrated the LoRaWAN GW's within the campus data network and the The Things Network server -- Displayed the data collected on a website Dashboard -- Defined coverage area by executing a site survey within the LoRaWAN Network.

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- 2018-2020 Semtech corporation *Software Engineer* in LoRa Cloud Services
- Created the "*LoRa Edge benchmark Python application*". This software evaluates the accuracy of multiple geolocation platforms, including GNSS, WiFi sniffing, and LoRa. It uses the difference between each geolocation service results and the real position to calculate a distance and direction error, then creates a report regarding the accuracy, availability, stability, and outliers of each service represented with CDF curves, Histograms, and charts.
 - Developed the "*SBK-lite Demo*", which is a visualization tool designed for quick demos wrote in Angular. It displays the data taken from LoRa devices in a minimalistic dashboard and is a simplified version of the original *Semtech's Smart building reference kit*.
 - Transferred LoRa Network server instances Operation from R&D team on Switzerland to Mexico. This kind of server manages LoRa devices, LoRa Gateways, data and applications, responsible of granting access, credentials, provision, reconfigure and deprovision devices and Gateways for the Semtech's *Smart Building reference Kit* and *Smart Asset Tracking*.
 - Supported multinational teams, mainly located in India, China, and the USA.
- 2017-2018 Infotec *Software Engineer / Consultant* in the Embedded systems Laboratory
- Consultant services for private industry writing technical documentation required to reach government funding for Industrial Internet of things solutions. The topics for these projects are: Agriculture, IIoT and retail.
 - Led feasibility studies, Planning (scope, definition, tasks, schedule, costs, staff, communications and risks), solution designs, diagrams, and technical details of the IoT solutions, quote technical aspects of the projects, and integration of the proposals.
 - Collaborated in the "*Mobile IoT stations for environmental monitoring*" solution, which consists on a drone equipped with a gas sensor mote to measure pollution levels at a significant height. The drone was built from scratch to dismiss non-functional elements and maximize flight time. -- Solution architect. -- IoT Research -- Constructed and programmed the drone. -- Assembled and programmed the gas sensor mote. -- Configured and performed hardening to the middleware OS (embedded Linux). -- Installed and configured the IoT infrastructure (using multiprotocol GW's with support for Zigbee, LoRa, BLE, WiFi and GSM/LTE) -- Configured the data broker. -- Developed the Backend of Application (using .Net). -- Developed the Frontend of application (using Angular).
- 2015-2017 SmartApp *Software Engineer / Cofounder* of the startup.
- Consultancy services for Nissan CIVAC plant Design of an IIoT traceability platform, which consists on collecting relevant data from automated tools wirelessly, for processing and fulfill traceability and quality control requirements, Feasibility studies, Solution architect.
 - Leader of "*Robotic Vision for quality inspection*" in E1 and E3 motor lines of Nissan A1 plant. This system consists of two robotic arms with cameras at their ends, each robot takes a sequence of photographs in different areas of interest, then the pictures are analyzed by a computer vision system that determines the absence or presence of parts needed to comply the specifications of the analyzed model. -- Collaborated as Project Manager-- Designed the computer vision system -- Developed the data models for pattern recognition -- Develop the GUI to visualize results -- Integrated the control of the robot within the application..

Education

- 2016 Universidad Panamericana Aguascalientes, México.
Major on Philosophical anthropology.
- 2012 Universidad Panamericana Aguascalientes, México.
Master on Science
- 2009 Universidad Panamericana Ciudad de México.
Major on Project Management.
- 2008 Universidad Panamericana Aguascalientes, México.
Bachelor on computer Science