

# Keoma Brun-Laguna

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## System and Network Director Wattson Elements

### Positions

- |                 |   |
|-----------------|---|
| 2019            | <b>System and Network Director - Wattson Elements</b><br>System Design and Architecture.<br>Network Design.<br>Co-Founder of the company.   |
| 2016 (3 years)  | <b>PhD Student - Inria</b><br>Deterministic Networking for Industrial Internet of Things.<br>– Deployment and implementation of Real-World Wireless Sensor Networks.<br>– Evaluating the limits and trade-offs of Time Slotted Channel Hopping.<br>EVA team, Inria, Paris, France<br>Supervised by Thomas Watteyne. |
| 2017 (4 months) | <b>Internship - Dust Networks</b><br>Packet Dissection and Network Analysis (Wireshark)<br>Building and Automation (Jenkins)  |
| 2015 (6 months) | <b>Internship - ICube</b><br>Multipath in 6TiSCH Networks,<br>– Solution proposal and implementation in OpenWSN<br>– Experimental analysis with IoT-Lab<br>ICube Laboratory, Strasbourg, France<br>Supervised by Fabrice Theoleyre.   |
| 2014 (3 months) | <b>Internship - LIP6</b><br>Energy Consumption in D2D Networks,<br>– Testbed setup (Android, Adafruit INA219)<br>LIP6 Laboratory, Paris, France<br>Supervised by Marcelo Dias de Amorim.  |

## Education

2016–2019	<b>PhD</b> Deterministic Networking for the Industrial IoT Sorbonne University
2015–2016	<b>Master of Science</b> (2nd year) in Computer Networks University Pierre et Marie Curie (UPMC, Paris 6) Jointly issued by Telecom ParisTech
2014–2015	<b>Master of Science</b> (1st year) in Computer Networks and Embedded Systems University of Strasbourg
2013–2014	<b>BSc (Hons)</b> in Computer Networks University of Abertay (Dundee, Scotland) Jointly issued by the University of Pau and Pays de l'Adour
2012–2014	<b>University Technology Degree</b> in Computer Science University Institute of Technology, (Bayonne, France)

## Projects

SaveThePeaches



### **Predicting Frost Event in Peach orchards**

I led the deployment of an 23-node SmartMesh IP network to monitor a peach orchard in Mendoza, Argentina. The network is connected to a back-end system that displays the data in real time.

🌐 <http://savethepeaches.com>

SnowHow



### **Monitoring the Sierra Nevada snow-pack**

I helped update an existing SmartMesh IP network in the Sierra Nevada to monitor the mountain snow-pack. This 48-node network now reports both network statistics and sensor values.

🌐 <http://snowhow.io>

SmartMarina



### **Monitoring the Cap d'Agde Marina**

I will deploy a SmartMesh IP network in the Cap d'Agde Marina in the south of France. The network will provide a security, environment and resources management system.

🌐 <http://smartmarina.org>

SOLsystem



### **An End-to-end Solution for Real-World Remote Monitoring**

I architected and developed the SOLsystem that is the back-end system used in the SaveThePeaches, SnowHow and SmartMarina project. It allows to easily manipulate, format and visualize the data produced by a wireless sensor networks.

🌐 <http://solsystem.io>

## Teaching

<b>ENSTA</b> Paris, France	“Computer Networks Lab” Introduction to Unix network commands and development of an application using Sockets in C. January 2017 and January 2018
<b>UCL</b> London, England	“Introduction to Low-Power Wireless Mesh Networks” 3-hours hands-on tutorial on SmartMeshIP, Node-Red and IBM Bluemix. 1rst March 2017.
<b>ENSTA</b> Paris, France	“The Internet of Things: Theory, Standardization and Hands-On Experience” Introduction to the Internet of Things concepts, challenges and solutions. December 2016, April 2017, April 2018, 4 days, with Thomas Watteyne
<b>S3++</b> Pojeaga, Croatia	“From a flower to the Internet” How to build an automated watering system. Sensing soil moisture, actuating a water pump, and publishing data online. July 2016, 10 days, Summer School of Science

## Technical Experience

<b>Tools:</b>	IDE: PyCharm, CLion, IAR Administration: BOUML, GANTT, L <sup>A</sup> T <sub>E</sub> X, Git, vim
<b>Programing:</b>	C, Python, Perl, PascalScript, C++, Java, C#, HTML, PHP, Coldfusion, CSS, Javascript, Shell
<b>Virtualization:</b>	VirtualBox, Vagrant
<b>OS:</b>	GNU/Linux, OpenWSN, TinyOS
<b>CD/CI:</b>	Jenkins, Travis
<b>Backend:</b>	InfluxDB, MySQL, SQLite, Nginx, Graphana, Ansible, collectd, postfix, Dovecot

## Technical Interests

Internet of (Important) Things, Low-Power Wireless Mesh Networks, .

## Personal

<b>Percussion</b>	
2013	<b>Creation of a Percussion Association</b> , president role for a year.
<b>Sports</b>	
	Climbing: I like to climb on rocks. Capoeira
<b>Computing</b>	
2016	In charge of the Internet Cube project in a non-profit Internet Service Provider 🌐 <a href="https://internetcu.be/">https://internetcu.be/</a>
2007	Creation of a social computing center in my home town (Parempuyre, France)
<b>Languages</b>	
	French (native), English (fluent), Spanish (fluent)

## Rewards

2016	<b>Runner up IEEE SECON 2016 Best Demo Award with</b> "A Demo of the PEACH IoT-based Frost Event Prediction System for Precision Agriculture", Keoma Brun-Laguna et al., 28 June 2016.
2011	<b>Member of the "24h de l'innovation 2011"</b> (Engeneering School ESTIA, Bidart).