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languages

French mother tongue
♥ Spanish bilingual
English fluency
Mandarin basic

programming

♥ C/C++, Java, JS
Android SDK and NDK
Objective C, Swift
Embedded Linux
STM32 MCU
ARM Cortex M0+, M3
Contiki, RIOT
Angular, Node, Cordova
PHP, Symfony2, Laravel
SQL, Bash, Python
Docker, Jenkins, Agile
Git, L^AT_EX

networks

♥ VLC - 802.15.7
♥ Bluetooth LE
802.15.4, 6LoWPAN
LPWAN, LoRa, Sigfox
♥ Network & IoT
security

work experience

- 2017–Now **Rtone** Lyon, France
R&D and Security Leader
Collaborative project management: SME Instrument, Eurostars, ANR, FUI PACLIDO (Lightweight Crypto for IoT)
Pentest and IoT Security consulting
- 2015–2018 **Rtone** Lyon, France
PhD student
PhD.: Bidirectional Visible Light Communications for the Internet of Things
Working toward bi-directional Device-to-Device communication using LED lights and smartphones. European patent application pending
- 2014– 2017 **Rtone** Lyon, France
Embedded Software and Research Engineer
Micro-controller programming:
 - Body-Area-Network development in a sport context (802.15.4)
 - Low Power management and optimization
 - STM32, ARM Cortex M0+, M0 and M3
 - TI MSP430.Bluetooth Low Energy firmware development on Nordic, Bluegiga SoC
Embedded Linux 3G Gateway: C++, Yocto Project
Mobile Applications :
 - Bluetooth Low Energy
 - Ultrasounds
 - iOS SDK using Objective C and Swift
 - Android SDK and NDK
 - Cross-platform using Apache Cordova and IonicWeb Applications :
 - Evolution and improvement of various Java WebApp (Spring, Hibernate, GWT)
 - OSGI Bundle development for the Eclipse Kura project using Eclipse Equinox
- H1 2015 **ENTEL, Universidad Politecnica de Cataluna** Barcelona, Spain
Light sensor development for the Ara platform
Research project within the Wireless Network Group, 5 months :
 - Visible Light Communications (VLC) state of the art
 - Development of a VLC front-end for the Google Ara modular smartphone
 - Hardware design and firmware programming in C
 - Android SDK and NDK programming
- 2013– Now **Freelance Developer** Lyon, France
Mobile and Web applications developer
Various mobile and web applications development using technologies such as Java, Swift, Symphony2/3, Angular, Polymer
Most relevant projects:
 - Meeting reporting Android application for a knowledge management project (TechCico Laboratory, Université Technologique de Troyes)
 - Intranet web application enabling energy consumption monitoring in a factory (Michelin Troyes)
 - Web Application allowing fire protection system scaling and planning
 - Electronic medical recording system development based on OpenMRS and Bahmni

education

- 2015–2018 **PhD.** Bidirectional Visible Light Communications for the Internet of Things CITI Lab
INRIA AGORA Team, funded by Rtone (French CIFRE fellowship)
- 2009–2015 **M.Eng.** in Computer Science and Telecommunications. INSA de Lyon
Fifth year final semester abroad at the UPC-ETSETB, Spain
First two years in Asian international section

publications

International conferences proceedings

- A. Duque, R. Stanica, H. Rivano, C. Goursaud, and A. Desportes, **"Poster: Insights into RGB-LED to Smartphone Communication"**
in *Proceedings of the 2018 International Conference on Embedded Wireless Systems and Networks EWSN'18*, (Madrid, Spain)
- A. Duque, R. Stanica, H. Rivano, and A. Desportes, **"Decoding methods in LED-to-smartphone bidirectional communication for the IoT"**
in *Proceedings of the 2018 Global LIFI Congress (GLC) GLC'18*, (Paris, France)
- A. Duque, R. Stanica, H. Rivano, and A. Desportes, **"SeedLight: Hardening LED-to-Camera Communication with Random Linear Coding"**
in *Proceedings of the 4th Workshop on Visible Light Communication System VLCS'17*, (Snowbird, Utah, USA)
- A. Duque, R. Stanica, H. Rivano, and A. Desportes, **"Demo : Off-the-shelf bi-directional visible light communication module for IoT devices and smartphones"**
in *Proceedings of the 2017 International Conference on Embedded Wireless Systems and Networks EWSN'17*, (Uppsala, Sweden), 2017
- A. Duque, R. Stanica, H. Rivano, and A. Desportes, **"Unleashing the power of led- to-camera communications for iot devices"**
in *Proceedings of the 3rd Workshop on Visible Light Communication System VLCS'16*, (New York, NY, USA)
- A. Duque, R. Stanica, H. Rivano, and A. Desportes, **"Demo: Unleashing the power of led- to-camera communications for iot devices"**
in *Proceedings of the 3rd Workshop on Visible Light Communication Systems VLCS'16*, (New York, NY, USA)

Patents

- A. Duque, A. Desportes, R. Stanica, H. Rivano. 2017. **"Procédés de communication en lumière visible"**
European Patent N° EP18157382, Priority Date: February 17th 2017

interests

- professional** : technological watch, free and open-source software activist, contributor at OpenMRS, Google Summer of Code 2014 and 2016 student
- sport** : duathlon, cycling, athletics (national level)
- culture** : reading, practicing the classical and electric guitar