

# Robin Beilvert

## Software & Electronics Engineer

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### Experience

- May 2018 - **Software/Hardware Engineer**, Kickmaker, Paris, France.  
Now · *SoftBank Robotics Europe* - Software development for Pepper robot  
Development & integration of a deep neural network for robot vision and enhancement of perception of human behaviors. Development of Qt/QML GUI for developers to understand the robot's perception of its surroundings, configure its behavior and simulate its social environment for instrumentation tests. Tools development for Pepper audio/video recording, compression and reinjection.  
· *French Bureau* - Hardware & software development for a remote controlled locking system  
PCB low-power conception and design with Nordic Bluetooth Low Energy SoC, sensors and actuators. Firmware development on top of Nordic nRF5 SDK.
- Sept. 2016 - **Electronic design engineer**, ClapSens, Paris, France.  
May 2018 Development of an innovative device control interface based on finger snaps and hand claps. PCB conception and design towards further industrialization, import-export considerations. Machine learning experimentation for clap detection algorithms. Implementation of cutting-edge Bluetooth 5 software on new CC2640R2F wireless MCU.
- March - Sept. 2016 **R&D Internship**, ClapSens, Paris, France.  
Hardware/software setup of a signal acquisition interface for research on clap/snap sound characterization. PCB conception and design : low noise audio amplification, 2.4GHz and 433MHz RF communication implementation on a single 33x100mm board. Bluetooth Low Energy and serial communication implementation on top of TI-RTOS framework on CC2650 ultra-low power wireless MCU. Casing CAD in according with acoustic constraints, research and purchase of an affordable high-resolution 3D printer for low series production.
- August 2015 **Personal project**, Toulouse, France.  
Design of an interactive RGB LED strip control system. Controlled by sounds and music using smartphone embedded Fourier Transform. Serial communication with PIC microcontroller over HC-05 Bluetooth UART bridge.
- June - August 2015 **R&D Internship**, LAAS-CNRS, Toulouse, France.  
Design and implementation of a Matlab/Simulink framework to increase frequency performances of Unmanned Aerial Vehicle control. Adaptation of C-written CANopen framework using USB-to-CAN drivers to communicate with Maxon motor control modules. Matlab S-Functions implementation for controlling the quadrotor arms tilting angle and communicating with the flight board.
- 2014-2015 **Projects**, Robotics club 7Robot, ENSEIHT, Toulouse, France.  
· *French Robotics Cup* : Autonomous robots design. PCB design : SMPS, H-bridge motor control, analog/digital actuators and sensors management. DC motor control loops on PIC microcontroller. Python AI on Raspberry Pi (Archlinux). Achievement : **Quarter-finalists, first team of engineering students of France**, ahead of 180 teams.  
· *Freescale Cup* : Conception of a line following model race car ; sensors, signal processing, control loops.  
· *Entertainment* : Design and building of an interactive 3D LED cube. Features 9 synchronized microcontrollers driving its 512 bi-color LEDs on 8 multiplexed floors. Usable with homemade Python games sending display instructions via UART.
- August 2014 **Internship**, Cofely Services - GDF Suez, Nantes, France.  
Climatic installation and maintenance at Ifremer, Oniris and Banque Populaire.
- July 2014 **Consulting**, Eva Albarran, Toulouse, France.  
Study and reproduction of thermoelectric sap flow measurement Granier probes, implementation of an Arduino datalogging module with low-noise amplifiers for their test. Collaborating with a CNRS Research Director, for the 2015 Venice Biennale.

### Technical skills

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|-----------------------|---|-------------|--|
| Programming languages | Python, C/C++, QML, L <sup>A</sup> T <sub>E</sub> X | Software    | git, PyTorch, Code Composer Studio, MPLAB X, Eagle, Matlab/Simulink, TensorFlow, git, SketchUp |
| OS                    | GNU/Linux, Microsoft Windows                        | Electronics | Digital/Analog electronics, PIC, ARM, Arduino, Raspberry Pi                                    |

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## Education

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- Sept.2015– **Exchange program, HUST**, Wuhan, China, Computer Science.
- Feb.2016 Main classes : Object-Oriented Programming, Artificial Intelligence, Multimedia, Digital Communication, Chinese.
- 2013–2016 **Engineering school, INP ENSEEIHT**, Toulouse, France, Electronics and Signal Processing.  
Graduation expected in 2016. Main classes : mathematics and signal processing, analog and digital electronics (Transistor circuits, VHDL, FPGA, ...), electromagnetism, programming (C/C++).
- 2011–2013 **Two-year intensive highly-selective course to prepare for competitive entrance examinations to National Engineering Schools, Lycée Clemenceau**, Nantes, France.  
Main classes : Mathematics, Physics, Engineering Sciences

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## Languages

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- English **Fluent**. TOEIC score : 905. European level B2. Daily use in presentations, meetings, report writing.
- Spanish B1 Good working knowledge
- Portuguese A2 Intermediate level
- Chinese A1 Basic. 160 hours of Chinese lessons included in HUST semester, weeks of backpacking in May 2014 & May 2019.
- French Native speaker

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## Interests/Hobbies

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- Associative **President 2014-2015 of 7Robot, ENSEEIHT's Robotics Club.**  
**Vice-president 2013-2014 of the club CarnavalINP**, Building a float for the carnival of Toulouse.  
Team, projects, sponsors and contact management, handcraft, technical training for beginners.
- Hobbies Painting, guitar, piano (autodidact). Dance in pairs : Rock, Swing (Lindy Hop), climbing, alpine skiing.
- Backpacking **China** : Beijing, Xi'an, Xiangyang, Shanghai, Wuhan, Changsha, Zhangjiajie, Yichang, Fenghuang, Yangshuo, Chengdu, Shiyuan, Hangzhou, Suzhou, Nanjing, Kunming, Shilin, Jianshui, Yuanyang, Dali.  
**Brazil** : Belo Horizonte, Ouro Preto, Brasília, Rio de Janeiro, Foz do Iguaçu.