# Cyril Royer

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*Young graduate from INSA Toulouse, specialized in electronics, control systems engineering and energy management, looking for job opportunity in power electronics or energy converter systems.*

## Education

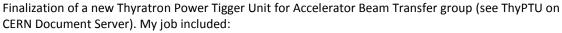### 2013-2019    National Institute for Applied Sciences (INSA), Toulouse, France

Engineering degree in electronics and control systems for embedded devices. Specialized in energy management (5th year PTP Energie). The last two years of curriculum mainly focus on practical work and complex design projects.

Skills acquired:
- Advanced control system design (SISO and MIMO linear or nonlinear systems).
- Analog and digital electronic hardware design.
- Programming and software design (Object-Oriented Programming, Real-Time Programming, Embedded Code).
- Solid knowledge of laboratory instrumentation (oscilloscopes, power supplies, function generators).

## Professional Experience

### Feb. Jul. 2019    Electronics technical student, CERN TE-ABT-EC, Geneva, Switzerland

Finalization of a new Thyratron Power Tigger Unit for Accelerator Beam Transfer group (see ThyPTU on CERN Document Server). My job included:
- Simulating on PSpice the ThyPTU and its different loads (including the bias board and thyratron).
- Evaluating different high voltage solutions for ThyPTU trigger modules.
- Testing the ThyPTU on the KFA45 kicker magnet test setup.
- Study the mechanical integration of ThyPTU module in a 19" crate.

### 2013-2018    Head of electronics team, TIM association, Toulouse, France
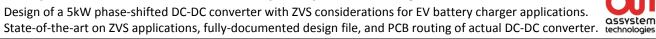
Design and implementation of embedded systems for fuel-efficient vehicles TIM07 and TIM08.
In charge of electric propulsion for TIM07, I was specialized in electrical motor control and PCB design.

Project examples within TIM:
- Complete design and implementation of a DC motor controller (H-bridge) with regenerative braking.
- Design of DC Motor Controller for Team Eco'Momes (2nd place in Shell Eco Marathon Battery-Electric Prototype)
- Embedded software design for multiple automotive embedded systems (lights, combustion engine controller…)

### Jul. Sept.2018    Power electronics internship – Assystem Technologies, Toulouse, France

Design of a 5kW phase-shifted DC-DC converter with ZVS considerations for EV battery charger applications.
State-of-the-art on ZVS applications, fully-documented design file, and PCB routing of actual DC-DC converter.

### Jul. Aug. 2017    Power electronics internship - Commissariat à l'Energie Atomique (CEA) Gramat, France

Repairing and reverse engineering of a 320 kW, tube-based power amplifier used for conducted EMC tests.
Technical documentation writing for maintenance. Market searching to find a replacement technology for tubes.

## Software

- Operating systems: Windows, Linux
- Numerical computing: Python, Matlab
- PCB design: KiCad, Altium Designer
- Simulation: Simulink, LTSpice, PSpice
- Acquisition/Instrumentation: Labview

## Spoken languages

- French: Native speaker
- English: International proficiency (TOEIC score: 965)
- German: Beginner's level
- Japanese: Beginner's level

## Personal Interests

Hobbies: Astronomy, spelunking, singing

Summer jobs: Waiter in a restaurant (three seasons in total).