David **TOCAVEN**

Master's degree in real time systems and automation

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French
Driver's licence

Education

2015 – 2018 **Real-time systems engineering - EEA master's degree**
Paul Sabatier University Toulouse

2013 – 2015 **Electronic, Electronic engineering and automatic Bachelor's degree**
Paul Sabatier University Toulouse

2010 – 2013 **Scientific stream Baccalaureate**
(equivalent to Hight School diploma)
La Borde Basse Hight School Castres

Work Experience

Apr. to Aug. 2018 (5 months) **Research internship,** *LAAS-CNRS, Toulouse*
Active diagnostic, hybrid system, observer, parity space

2016–2017 (4 weeks) **Research internship,** *LAAS-CNRS, Toulouse*
DEVS model, discrete time, discrete events, modelling

2016 – 2017 (6 months) **Master project,** *Paul Sabatier University, Toulouse*
Scientific method, automaton, project management, Matlab

2016 – 2017 (5 weeks) **Research internship,** *LAPLACE, Toulouse*
Optic, digital image processing, thermal science, Matlab, LaTeX, Discovering the research world

2016 to present **Private lesson,** *Toulouse*
Mathematics and automatic,
Teaching skills and mathematical visualization

Skills

Automatic control – discrete and continuous time

- **Modelling :** State space, linear and non linear, linear multiple input-output, uncertain, time delays system
- **Analysis :** Frequency, temporal (linear and non-linear), Lyapunov theory, performance, uncertain system, robustness, stability of times delays system
- **Control :** PID, multiple input-output, robust, Observer based state feedback, late system

Automatic control – Discrete events systems

- **Modelling :** Automaton, Petri net (standard, stochastic, timed), $(max, +)$ algebra, Discrete EVent Specification (DEVS), Language
- **Analysis :** Cyclicity, controlability, diagnosability, determinism, coverage tree, marked and recognized language
- **Control and diagnostic :** Supervised control, diagnoser, observer
- **Implementation :** Test, simulation, C, VHDL and ST implementations, Oriented object approach

Implementation

- **Computer science :** System modelling (UML, UML2, SysML, embedded systems), object-oriented, parallel (mutual exclusion, synchronisation, thread, multitasking)
- **Industrial computing :** DSP *notions*, Microcontroller *basics*,
- **Real time :** OSEK/VDX standard, scheduling, RTOS, requirement checking, reactivity
- **Network :** Internet *basics*, Network Calculus, CAN, AFDX, real time network

Software skills

For automatic : **Matlab** : Simulink, OOP, GUI, RTW
For computer science : **Eclipse**,**Git**, **Doxygen**
Office software : **TeXmaker**, **Microsoft office suite**, **Free Office Suite**

Languages

Matlab *good knowledge*, **LaTeX** *good knowledge*, **C** *good knowledge*, **Assembler** *notion*, **VHDL** *good foundation*, **ST** and **IL-LIST** *notion*, **Arduino** *good foundation*, **Java** *basics*, **C++** *notion*

Language and communication skills

- **Language :** French (mother tongue), English
- **Communication :** Oral and written in French and English
- **Project management :** Gantt, WBS, RACI, Agile

Personal interests

Photography

Travels

Do-it-yourself (bike trailer, electronic, ...)