

# Aurelien SERGENT

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<http://creatingdraw.chez-alice.fr/profile.php>

**OBJECTIVE:** To obtain an engineer position in energy engineering ; electric/hybrid automotive engineering

**PROFILE:** Master of Science in **Automotive / mechatronic engineering** {controls; simulation; electrical; mechanical}

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## EDUCATION

- 2004 – 2009      **ESTACA:** one of the leading French engineering universities specialized in the transport sector.  
Paris, 5 year programme, MS in Automotive, Aerospace & Railway Engineering.  
Website: <http://www.estaca.fr/estaca/en/>  
Ranking: <http://www.letudiant.fr/palmares/classement-ecole-ingenieur-apres-bac.html>
- Relevant courses:      Physics & Technologies of sensors / actuators, Electrotechnics, Power electronics  
AC /DC motor, servos, Control, Project management, Production management  
Gasoline / Diesel - internal combustion engine (ICE), emissions, HEVs,  
Transmission, Suspension, Architecture, Steering, Elastomer, Thermodynamics  
Strength of materials and structures, Fluid mechanics, Hydraulic Systems  
Reliability, Availability, Maintainability and Safety (RAMS), Dependability
- 2002 – 2004      **CPGE Saint Charles:** Preparatory School to participate for entrance to top grad engineering schools
- 2002              Scientific Baccalauréat in Maths & Physics (Equivalent to High School Diploma)

## WORK EXPERIENCE

- 2009 : 6 months      **ANL – Argonne National Laboratory**, Chicago, USA  
Study of fuel consumption potential on advanced vehicle configurations. (ordered by DOE, the US Department of Energy as part of the Government Performance and Results Act (GPRA)  
Run and analysis with the software PSAT. More than 2000 different vehicles have been simulated.  
Study on HCCI engine, Writing of Matlab programs / algorithms - (Matlab, PSAT, Excel, PSPad)
- 2008 : 4 months      **DELPHI Automotive Systems**, Bascharages , LUXEMBOURG  
DFMEA of a LIN-BUS electric servo / actuator for an air-conditioning system  
(Failure Mode and Effects Analysis method specifically applied to product Design)  
Design of a bench to perform validation tests on the actuator  
Tests of integration on HVAC, Noise test in a semi-anechoic chamber,  
Test in climatic chamber      -      (Excel, Matlab, Labview, Lin-bus, CAN)  
Testing and measurement tools: Multimeter, Siemens PLC Logo, sensors, data acquisition system: Fluke Hydra
- 2007 : 4 months      **Feu Vert Auto Center**( car servicing chain), Orléans, FRANCE  
Customer Services Assistant, supply management, auto mechanic

## SCIENTIFIC / ACADEMIC PROJECTS

- 2009              Technical and economic feasibility study on an urban vehicle:  
Project requirements, needs requirements, valuation survey, design and validation of components, transportation and logistic flow management. (Excel, Catia, Adams, Solidworks)
- 2008              Design of the Control Strategies of the Toyota Prius and its electric motors to minimize the fuel consumption. Modelisation and simulation of the entire system (Matlab, Simulink, Stateflow)
- 2007              System Safety Engineering: FMEA of an ASR system (Anti Slipping Regulation)  
Sizing of a car brake system (components, efficiency, handling)
- 2006              Design & modeling of a vehicle with a Hybrid-Serie architecture within the framework of the contest “Styling & Technical Competition” of the SIA (French Automotive Engineers Society)

## SKILLS

- **Languages:** French native speaker  
English: advanced level (TOEIC score : 870/1000)  
Spanish: intermediate
- **Computer:** *Simulation, Instrumentation & Controls:* Matlab, Simulink, Labview, Stateflow, dSpace, PSAT  
**Literacy** *CAD:* Catia, Solidworks, AutoCAD, Photoshop  
*Language:* C, C++, Java, Matlab  
**Others:** MS Office: Word, Excel, PowerPoint), Firefox, Norton Ghost, data-processing maintenance
- **Qualities:** Inventive (problem solving skills) - Curious - Initiative – Teamwork – Tolerant
- **Additional:** First Aid Certificate, driver's license

## ACTIVITIES & INTERESTS

Sport : Jogging

Photography : 7 years, Art & Design, DIY, 1964-69 Mustang, Austin Mini (currently renovating a 1972 mk3)

Renewable energies, passive houses, electric systems & electric vehicles

Member of “Les amis de J.Bertin” an association about Aerotrains & hovercraft design by Bertin Technologies during the 70's