Jean-Baptiste CARRÉ
French - 31 years old
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Main experiences

Heat pumps
Radial turbomachinery
Two-phase flow heat transfer
Refrigeration technologies

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Development, experimentation, and modeling of refrigeration technologies

Profile

Heat pump specialist experienced with experimental and simulation work. Enthousiasm technophile interested in heat transfer and refrigeration technologies. Curious and passionate.

Experienced also with :

- **project communication**
  Good presentation and communication skills *developped through many presentations and meetings during [Exp.1, Exp.2, and Exp.3].*
- **co-worker supervision and team work**
  Supervision of 3 different technicians *(one at a time) for the realization of 3 heat pumps and heat transfer experimental setups [Exp.1]. Supervision of 6 semester project students and 2 interns (2 months each) [Exp.1].* ***Team work*** *on different projects [Exp.1, Exp.2, Exp.4].*
- **events and meetings organization**
  Chairman *role in an international conference (ECOS2010, Lausanne - Session 3.8), organization and supervision of student* ***meetings and brainstorming sessions*** *[Exp.1].*
- **definition and funding of new projects**
  - *The project associated with [Exp.2] has been* ***defined from scratch*** *and proposed to EDF R&D. This definition included finding the* ***funding*** *for the project and the intership position. The project associated with [Exp.4] has also been defined from scratch. It included the* ***finding of a partnership****.*

Selected work experiences

- **Exp.1 : Research assistant (PhD Thesis project)** Oct. 2008 – Oct. 2013
  Industrial Energy Systems Laboratory (LENI), École Polytechnique Fédérale de Lausanne (EPFL), Switzerland.
  Development of twin-stage air/water oil-free domestic heat pumps *powered by twin-stage oil-free radial compressors rotating on gas bearings. This work has included* ***experimental and modeling aspects****, with the development of a dynamic simulation of the tested systems.*
- **Exp.2 : Thermal systems engineering assistant (intern)** Feb. – Sep. 2008
  EDF R&D, Moret–sur–Loing, Seine et Marne, France.
  Preliminary design of building heating and cooling systems, and of water heating systems*, based on thermodynamic equipments (HVAC, heat pumps, thermodynamic cycles, etc...), for buildings in the service sector.*
- **Exp.3 : Thermal engineering assistant (intern)** Jun. – Sep. 2007
  EDF R&D, Moret–sur–Loing, Seine et Marne, France.
  Initial mission : Sensitivity analysis of uncertain parameters in service sector buildings energy consumption diagnostics*. That studying aimed at the determination of the impact of the expert's estimation mistakes on those parameters.*
  Extra mission : Preliminary study of different thermal simulation model adjustment methods*. The goal of that study was to characterize the influence of the adjustment methods on the simulation results.*
- **Exp.4 : Passive house designer (engineering school project)** Oct. 2006 – Jun. 2007
  Project manager and designer roles in an engineering project consisting in the ***design of passive houses characterized by low builing and maintenance costs****. That project was developed in partnership with the "Office Public d'Aménagement et de Construction (OPAC)" of Saône & Loire (French agency that builds and manages housing structures for, or in collaboration with, the French Government or the local French governments).*

Education, Selected Trainings and Workshops, Languages, and Computer Skills ☛ **Next page**

Education

— **Master of Science in innovation, design, and engineering** + 2008
Formalization of a generic method to control the costs along the whole product life cycle. Joint diploma at Arts & Métiers ParisTech (ENSAM) and École Centrale Paris (ECP), two of the French leading engineering schools, Paris, France.

— **Master degree in Mechanical Engineering** 2008
Arts & Métiers ParisTech (ENSAM), one of the French leading engineering schools, particulary known for its teaching in Mechanics and Manufacturing processes, Paris, France.

— **Two-year University degree in Mechanics (DUT)** 2005
Education focused on Mechanics, Product Design, and Manufacturing processes, Institut Universitaire de Technologie Grenoble 1, Université J. Fourier, St Martin d'Hères, Isère, France.

Languages

– **French** *Mother tongue.*

– **English** *Estimated C2 level on the European Language Council scale (Proficient level) - PhD thesis written and defended in English. TOEIC score 2008 : 920 points.*

Selected computer skills

Advanced computer skills, with various kind of software and operating systems :

– **Design** *Good skills with Catia, Pro/Engineer, and SolidWorks - Intermediate skills with CES Selector ;*

– **Simulation** *Good skills with MatLab, Octave, Maxima, Mathematica, gPROMS, and OpenModelica ; Basic skills with Dymala, ANSYS, RDM6, and Comsol ;*

– **Office** *Good skills with Microsoft Office, OpenOffice.Org, LibreOffice, and LaTeX ;*

– **Programming** *Basic programmation skills with Microsoft VisualBasic, Python, and Rubis ;*

Strong interest for free software and open technologies. Good skills with GNU/Linux operating systems (Gentoo Linux, Debian, and more) and with many kinds of free software on GNU/Linux, Microsoft Windows, and Apple operating systems.

Extra curricular activities : Swimming, photography, hiking, mountain biking, computer sciences, free software, GNU/Linux.