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## Research interest

Currently, my research interest is to detect emotional states from recordings of EEGs and other physiological signals. This research can find several applications in fields such as human-computer interfaces, brain-computer interfaces or virtual reality.

## Research experience

2002 - 2003 **Research fellow in combinatorial optimisation**, collaboration between the company SABATE and the laboratory LERIA
- Optimisation of an automatic system to allow for corks classification.
- Study of a decision help tool to improve the process scheduling. Two objectives: decrease delivery delays and stocks.
- *Tools / skills:* metaheuristics, CSOP, Visual C++.

2002 **DEA (master equivalent) in vision** at LIRMM (computing, robotic and microelectronic laboratory of Montpellier).
Omnidirectional image analysis to obtain the camera displacement.
*Tools / skills:* signal processing, Lucas-Kanade algorithm, Matlab.

2001 **Training period in robotics** at LIRMM
Modelling of a real time code and analysis of its reliability, applied to medical robotic.
*Tools / skills:* C, QNX (real time UNIX for PC), Petri nets.

2000 **Virtual reality project** at IMERIR (higher engineering school in computing and robotics)
Development of a modeller that can generate a virtual environment and of a 3D engine.
*Tools / skills:* OpenGL, DirectX, MFC, UML.

## Education

2001 - 2002 Doctoral school of Montpellier II. DEA SYAM (Automatic Systems and Microelectronics).
1999 - 2002 Engineering degree in computing and robotics. IMERIR. Perpignan (France).
1997 - 1999 University of technology in computing and industrial systems. Bourg en Bresse (France).

## Computing skills

**AI:** metaheuristics, neural networks, modelling (CSP, graphs…)
**Industrial computing:** Petri nets, GRAFCET, 68xxx family
**Operating systems:** DOS**,** Windows 9X/NT, UNIX
**Languages:**, C/C++, Pascal, SQL, LISP, Assembler
**Tools:** VC++, Delphi, Windev, Access, Matlab
**API SDK:** Win32, MFC, DirectX, OpenGL
**Conception methods:** UML / OMT, SART, Merise

## Language

French Mother tongue
English Intermediate written and spoken

## List of 3 preferred projects

**Here comes the list of projects that seem relevant to me by increasing order of interest:**

- **Project 2: multimodal caricatural mirror**

**My interest in this project concerns multimodal emotion recognition. It is well known that emotion can be expressed via several channels such as facial expressions, voice, gestures but also physiological signals (EEG, heart rate, galvanic skin response, etc.). Using physiological signals as an additional modality in a multimodal emotion recognition system will likely improve performance.**

**Skills: signal processing (especially for EEGs), Matlab, virtual representation (DirectX, OpenGL).**

- **Project 3: biologically driven instruments**

**It is clear that music elicits emotions in the listener and that a composer tries to put particular kinds of emotion in his work. From this point of view, detecting emotions from biological signals and using this information to influence sound generation can be interesting. The multimodal aspect of this project is also of great interest to me.**

**Skills: signal processing (especially for EEGs), Matlab, music knowledge and interest.**

- **Project 4: Multimodal Focus Attention Detection in an Augmented Driver Simulator**

**Attention is strongly linked to emotions. For example, emotions such as boredom or interest gives direct information about attention. For this reason, detection of emotions from physiological signals can be useful to infer user's attentional state.**

**Skills: signal processing (especially for EEGs), Matlab.**