



# Saâd LACHHAB

Mechanical Engineer  
Acoustics and vibrations

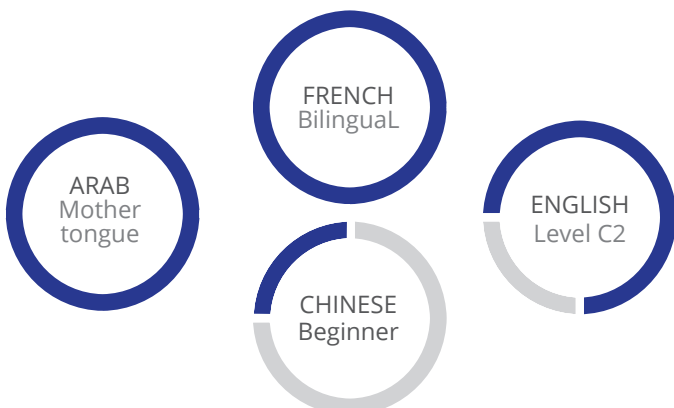
My main asset is to read scientific publications, to be able to understand and apply them quickly and efficiently. I am autonomic, curious, flexible and full of team spirit. Hope to share my enthousiathm with you.

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## WORK EXPERIENCE

- **Safran Aircraft Engines - Paris** Aug-Junary 2019  
Development of an acoustic modal decomposition tool of aircraft engine noise. Integration of the tool in the testing division. Study of the parametrization influence. Optimization of the microphones position of the acoustic array.
- **Saint-Gobain Glass - Thourotte** June-Aug 2018  
Exhaust duct noise reduction. Design of a muffler with porous lining.
- **Saint-Gobain Weber - Thourotte** May-June 2018  
Acoustic isolation of two work stations. Study of the ambient noise and design of acoustic cabins.
- **Bing Bin - Compiègne** Sept-June 2018  
Co-founder of Bing Bin, a start-up dedicated to waste management and prevention. <https://www.bingbin.io/>
- **Airbus - Toulouse** Feb-August 2017  
Validation of an aircraft noise prediction tool. Operationnal Noise Monitoring of the A350-1000: automatisa-tion of parasitic noise sources and flyovers detection (detection rate up to 99%).
- **Help refugees - Calais**  
Contribution to donations logistic and to social, humanitarian and cultural initiatives.

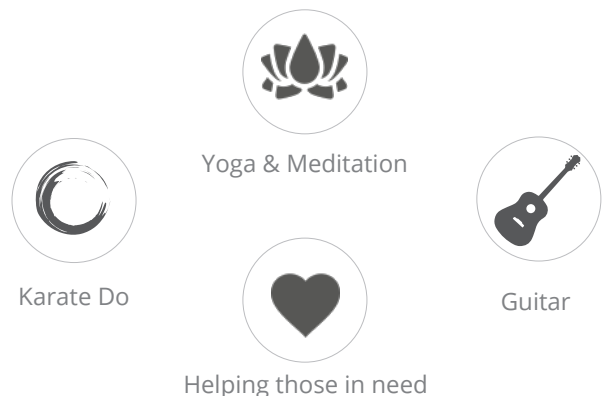
## LANGUAGES



## EDUCATION

- ↑ 2015 - 2018  
Mechanical Engineering.  
Compiègne University of Technology - France.
- 2018  
Entrepreneurship.  
European Innovation Academy - Italy.
- 2017 - 2018  
Machine Learning.  
Stanford, Johns Hopkins on Coursera.
- 2012 - 2015  
Preparatory classes for competitive exams or admission to Business and Engineering schools, with high distinction.  
CPGE-Ibn Ghazi Rabat - Morocco.
- 2011 - 2012  
Experimental science baccalaureate, option physic and chemistry, with honors.  
Ryad Al Maarifa - Morocco.

## ACTIVITIES



## STUDENT EXPERIENCE

- **European Innovation Academy** 3 weeks - July 2018  
World's leading entrepreneurship programs. CTO of Cura, a project to revolutionize the way you're eating by providing you healthy, cheap and lovely hyperfood.
- **Vibroacoustic analysis of ducts** Sept-june 2018  
Analytical, numerical and experimental analysis of rectangular and circular duct, in vacuum and immersed in a fluid.
- **Dynamic of the TAIPEI 101 tower** Sept-june 2018  
Modelization of the tower. Finite element discretization. Response to gust of winds and earthquakes. Eigenmodes, frequency response, temporal response...
- **Psychoacoustic Test** Fev-june 2018  
Development of a Matlab GUI test in order to study the sound of printers. Measure and acoustic characterization of the test sounds. Principal Component Analysis for perceptual dimensions identification using measured quantities. Linear regression models for perceptual space identification using acoustic metrics. Linear regression models for prediction of annoyance and overall product quality as functions of other subjectively measured quantities.
- **Machine learning** Sept-jan 2017  
Image recognition and multiple datasets training using machine learning algorithms for classification and regression problems: Neural Networks, Support Vector Machines, Naive Bayes, Decision Trees, Principal Component Analysis, Random Forest, Genetic Algorithms...
- **Expert system design** Sept-jan 2017  
Design of an expert system in order to help with geographic location in the game GeoGuessr.
- **Fuzzy system design** Sept-jan 2017  
Matlab design of an aircraft noise certification validation tool based on fuzzy logic.
- **Classrooms acoustic diagnosis** Sept-jan 2017  
Acoustic diagnosis of classrooms. Comparison between old and new entities. Certification and listening metrics validation.
- **Renault car acoustic analysis** Sept-jan 2016  
Acoustic modal analysis of the passenger compartment of a Renault Megane 2014. Modal analysis of the car's chassis and roof.
- **Guitar response synthesis** March-june 2016  
Modelisation of the strings coupled with the guitar body under Matlab. Choice of appropriate parameters for a good listening of a musical composition.
- **Wine cellar** Sept-january 2015  
Quality management during the design and the production of a Darty wine cellar: Quality Function Deployment, Experiment Plan, technical organization of the product, Failure Modes and Effects Analysis configuration management, quality assurance and standards ISO 9000, standardization and certification.

## COMPUTER KNOWLEDGE

Matlab, R, Python, TensorFlow, Keras, Apache Spark, Hadoop, Pandas, Scikit-Learn, COMSOL multiphysics, Artemis, LEA, Abaqus, B&K Pulse Labshop, Pulse Reflex, LMS Test Lab, PureData, DEWESoft, Acoubat, Logic Pro X, ICEM-CFD, ANSYS Fluent, FLUX2D, Illustrator, Excel VBA, Illustrator, Photoshop, XD...

## COMPETENCE

-**Noise and vibration measurement and analysis** (Multichannel spectrum analyzer, sound intensity probe, structural vibrations, acoustic propagation in ducts, noise measurement, characterization of materials, beamforming, modal decomposition...)

-**Discretization by finite elements method (FEM) in static and vibratory domains** (Implementation and critical analysis of finite element models and obtained results. Manipulation of various finite element tools).

-**Dimensioning of mechanical structures subjected to stresses and determination of its deformations under load.**

-**Sound Design** (Integration of the acoustic dimension in product design, with a user orientation through psychoacoustics. Vocabulary and physical characteristics. Classification of sources according to their cognitive, behavioral and emotional impact. Sound test development, from sound recording to its restitution).

-**Signal processing** (Extract, analyze and exploit the temporal and spectral information of an analog or digital measurement signal).

-**Data Mining and Machine learning** (Development machine learning decision systems: Informed choice of methods, implementation and evaluation of performances).

-**Fuzzy logic** (Implementation of fuzzy approaches to solve complex modeling problems in evaluation, control, diagnosis, supervision, prediction, product design, risk analysis and maintenance).

-**Programming algorithms dedicated to numerical analysis** (Numerical resolution of linear or nonlinear equation systems and differential equations, by direct and iterative approaches).

-**Implementation of Quality Management Tools** (Quality Function Deployment (QFD), Experiment Plan, Failure Modes and Effects Analysis (FMEA)...)

-**Entrepreneurship** (start-up creation from A to Z).

