

Contact

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www.linkedin.com/in/francisco-badea (LinkedIn)

Top Skills

Mechanical Engineering Research
Finite element Analysis
Structural Optimization

Languages

Spanish (Native or Bilingual)
English (Native or Bilingual)
Romanian (Native or Bilingual)

Publications

Detailed Study on the Behavior of Improved Beam T-Junctions Modeling for the Characterization of Tubular Structures, Based on Artificial Neural Networks Trained with Finite Element Models

Methodology for the accuracy improvement of FEM beam type T-junctions of buses and coaches structures

Identification of Tire Model Parameters with Artificial Neural Networks

Characterization of Urban Bus Acceleration Cycles for Fatigue Analysis with a Portable Low-Cost Acquisition System

Active control of a composite panel utilizing piezoelectric patches connected to negative capacitance shunts

Francisco M Badea R

FEM Expert Director
Pozuelo de Alarcón

Summary

I have a passion for Research, Technology and Science, the answer to most of the world's modern and future problems relies on science which could make this world a better places and improve the live of millions of people.

Experience

FEM Expert Engineering

7 years 6 months

General Director and Co Founder

January 2015 - Present (7 years 6 months)

FEM Experts represents a multilevel project. Initially was created as a scientific community to provide reliable high quality finite element analysis tutorials which then grew to an Engineering company providing diverse types of engineering services (simulation engineering, measuring engineering, etc).

We have a team of very experienced engineers with a significant experiences in Engineering Research. Also we are always in the look for potential highly skilled collaborators for any new projects.

You can check us on: <https://femexpert.com>

Railway Calculation Expert

January 2015 - Present (7 years 6 months)

We have extensive experience performing railway calculations according to the EN12663 and EN15085 normatives.

We have a ISO 90001 certification for this type of calculations and we also have the EN15085 CL4 certification for the evaluation of welded joints.

CERTIFER BELGORAIL

Railway Structural and PRM Certification Expert

September 2016 - Present (5 years 10 months)

Evaluating Structural and PRM (people with reduced mobility) documentation for railway certifications in the following projects:

- Flytoget project for CAF
- S107 project for Talgo
- S106 project for Talgo
- Vossloh DE18 Akiem locomotive modification
- Eurotunnel passengers voluntary assesment
- Eurotunnel freight assesment

TÜV Rheinland Europe

Railway Structural and PRM Certification Expert

November 2021 - Present (8 months)

Evaluating Structural and PRM (people with reduced mobility) documentation for railway certifications

Universidad Antonio de Nebrija

University Professor

2015 - Present (7 years)

Machines and Mechanisms Professor

Finite Element Analysis Professor

Advance Design and Calculation of Machines Professor (Master's Degree)

INSIA - UPM

Researcher

March 2009 - January 2015 (5 years 11 months)

- Researching various methodologies to optimize the behavior of tubular structures

modeled with beam type elements, with direct applications and interest on Buses

and Coaches FEM modeled structures.

- Developing an alternative type of element compatible with beam type elements

capable of simulating the junction's behavior in a more realistic way

- Actively participating in various nationwide (Spain) and European research projects

with application and implementation in the transportation industry

- Performing structural modal analysis and FEM correlations based on a Modular Lightweight Sandwich Bus prototype among the European research project LITEBUS.
- FEM modeling and implementation of methodologies to analyze fatigue and life expectancy for two interurban buses prototypes (ANSYS) among the national research project INNELBUS (Spain).
- Dynamic simulations performed in order to study the behavior of baby strollers inside urban buses (LS-Dyna) for the national research project ASUCAR (Spain).
- In charge of the concept, modeling, and analyzing the structural modifications needed in order to transform an Iveco 4x4 vehicle into a parallel hybrid vehicle with extended range (National project Innvextran)

Georgia Institute of Technology
 Research internship
 May 2011 - August 2011 (4 months)

- Performed a short stage at the Georgia Institute of technology in Atlanta-USA, during the period 05-2011 until 08-2011, under the supervision of Prof. Kenneth A. Cunefare director of the Integrated Acoustics Laboratory.

- Working with active vibration control systems with piezoelectric patches and negative shunt circuits, at this stage icontributed to the development of the article:

K. A Cunefare, B.S Beck and F. M. Badea, Active control of a Composite panel utilizing piezoelectric patches connected to negative capacitance shunts, The Journal of the Acoustical Society of America

Forever Pipe
 Transport Director
 July 2007 - May 2008 (11 months)

Managing the transportation operations of brick factory located in the west part of Romania in the city of Lugoj

Managing the good and efficient work of all the machines that are used in the factory for production purposes (Trucks, heavy utility vehicles, cars, vans, etc)

Developing and obtaining new technologies that would increase the efficiency of the transportation division of the factory

Cernavoda Nuclear Plant

Official Translator

September 2006 - October 2006 (2 months)

Cernavoda Romania

Translating from English – Spanish and Romanian, during the general maintenance

outage for the turbine and generator sector of the nuclear plant

Obtaining experience and engineering knowledge mainly in the maintenance and fabrication of big dimension turbines and electrical generator of big dimensions

ATP Open Romania

Official Translator and press center incharged

September 2005 - October 2005 (2 months)

Translate between English, Spanish and Romanian for the press center of the event.

In charged of the well functioning and coordination of the press center of the event.

ATP Open Romania

Official Translator and press center incharged

September 2004 - October 2004 (2 months)

ATP Open Romania

Official Translator and press center incharged

September 2003 - October 2003 (2 months)

Bucharest, Romania

ATP Open Romania

Official Translator and press center incharged

September 2002 - October 2002 (2 months)

Bucharest - Romania

Translating from English, Spanish and Romanian, for the press center and for the national television.

Working as member of the press center.

Education

Universidad Politécnica de Madrid

Doctor of Philosophy (PhD), Mechanical Engineering · (2009 - 2014)

Universidad Politécnica de Madrid

Master's degree, Mechanical Engineering · (2008 - 2010)

Universitatea „Politehnica” din București

Master's degree, Automotive Engineering · (2007 - 2009)

Universitatea „Politehnica” din București

Bachelor of Engineering (B.Eng.), Automotive Engineering · (2002 - 2007)

San Calixto