

CURRICULUM VITAE

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Technische Universität Berlin
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Education

Technische Universität Berlin, Berlin, Germany

2016 - present

PhD. Candidate, Berlin International Graduate School in Model and Simulation based Research (BIMoS)

Faculty V, Chair of Aero engines

Research project: "Aeroelastic numerical investigation of pressure disturbances induced by pulsed detonation combustion in gas turbine axial compressors"

Universidade Federal de Juiz de Fora, Juiz de Fora, Brazil

2011 - 2016

Sc.B. Mechanical Engineering, 5 yearlong, corresponding to *Diplom*

Thesis title:

"An adaptive time domain formulation associated with the finite element method for acoustic-elastodynamic coupled models"

Brown University, Providence, USA

2013 - 2014

Sc.B. Mechanical Engineering, Brazil Scientific Mobility Program, fully funded scholarship recipient

Complementary Education

Scientific Initiation on Numerical methods in transient analysis of Fluid-Structure Interaction, employing different numerical techniques simultaneously, Universidade Federal de Juiz de Fora **2014 - 2016**

Scientific Initiation in Mathematics, Dynamic systems, Universidade Federal de Juiz de Fora **2011 - 2012**

Scientific Initiation in Mathematics, Universidade Federal de São João del Rei, Brazil **2008 - 2009**

The above projects were fully supported by the National Counsel of Technological and Scientific Development (CNPq)

Skills

Programming and software: MATLAB, C, Fortran, Visual Basic, Linux, ANSYS, COMSOL, OpenFOAM, SolidWorks; finite element method, optimization methods, parallel programming

Languages: Fluent English and Portuguese; intermediate German, basic French and Spanish

Personal: Hardworking, independent and reliable; calm, interactive and articulated when working in teams

Professional Experience and Research

Research group on computational modeling of Fluid-Structure Interaction, Juiz de Fora, Brazil **2015-2016**

- Numerical and theoretical research on solid-fluid coupled models, discretized by the finite element method and the finite differences method with complete in-house codes
- Development of new techniques specially designed to reduce spurious oscillations on the numerical solution
- Main results published on the Journal Computers & Structures (DOI: 10.1016/j.compstruc.2017.04.007)

Classification of short circuit GMA welding using artificial neural network, Juiz de Fora, Brazil **2015**

- Numerical application of artificial neural network to classify GMA welding signal with respect to the amount of shielding gas used, applying the Laprosolda criterion, with in-house experimental data
- Results published on the 23rd ABCM International Congress of Mechanical Engineering (COBEM), 2015

Predictive maintenance techniques applied in fleet oil management, Juiz de Fora, Brazil **2015**
- Maintenance techniques and lubricating oil analysis coupled to monitor machine components and vehicles
- Publication on the International Journal of Mechanical Engineering and Automation (2016; 3 (10): 414-420)

Internship at engineering company U&M Mineração e Construção, Juiz de Fora, Brazil **2015**
- Elaboration of preventive and predictive maintenance schedules for mining equipment and lubricants, including documentation of technical improvements in complex equipment (such as *Caterpillar* or *Komatsu* units)
- Failure analysis was performed in order to lead to root cause of equipment malfunctioning or breakdown
- Cooperation in extensive workforce team, with national and international operations

Computational Fluid Dynamics (CFD) applied to industry, Brown University, Providence, USA **2014**
- Partnership with industry in development of CFD algorithm modeling flow control for turbulent flows
- Experience in multinational team, tight schedules and advanced programming, associated with experimental data from the field. Applications: flight aerodynamics, gas turbine, wind turbines etc.

Design of beta-type solar powered Stirling Engine, Brown University, Providence, USA **2014**
- Complete design including thermodynamic, mechanical and generalized optimization settings
- Cooperation in international team, with engineering concept defense and project presentation

Teaching assistant (TA) in ‘Algorithms’ course, Universidade Federal de Juiz de Fora **2012 - 2013**
- Advanced learning through teaching, and tutoring of students from different areas
- Review of didactic material used in the course

Research on efficient biomass combustion process for isolated communities, Rio de Janeiro, Brazil **2012**
- Analysis of possible replacement of diesel generator sets in isolated communities with a more efficient biomass combustion process
- Results published on the 14th Brazilian Congress of Thermal Sciences and Engineering, 2013
- Publication of paper on Journal of Energy and Power Engineering (ISBN: 1934-8983)

Complete engineering design of a RC-Aircraft, 13th and 14th SAE Aerodesign, ITA, Brazil **2011 - 2012**
- Design, building and testing RC-Aircraft for SAE BRASIL Aerodesign competition
- Leadership experience, with emphasis on Aerodynamics and Stability project, including manufacturing stage
- Publication of paper “Project-based learning: the SAE Aero Design experience” (ISBN: 9789522163158) in the International Conference on Engineering Education 2012, Turku, Finland

Prizes and Certificates

Test of English as a Foreign Language (TOEFL) – Grade: 104, ETS **2012**

First Certificate in English (FCE) – Grade A, ESOL by University of Cambridge **2012**

Bronze Medal in the 3rd Brazilian Public School Mathematical Olympiad, IMPA, Brazil **2007**

Silver Medal in the 2007 Minas Gerais Mathematical Olympiad, UFMG, Brazil **2007**

Relevant Coursework

Advanced Fluid Dynamics

Continuum Mechanics

Mechanics of Solids

Gas Turbines

Elements of Combustion

Heat and Mass Transfer

Thermal Machines

Fluid Mechanical Systems

Internal Combustion Engines

Design of Engines and Turbines

Numerical Methods for PDE

Finite Element Method

Dynamic Analysis of Structures

Vibrations