Lucas BREDER TEIXEIRA

Lyon – France
Brazilian, married, 33 years old
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Work Experience

Application Engineer – Nonlinear Mechanics   *May 2023 – Current*

EDF – Électricité de France (Lyon – France)

- Thermo-mechanical finite element simulations applied to nuclear power plants equipment.
- Fracture mechanics analysis supported by design and inspection codes (RCC-M and RSE-M).
- Welding numerical simulations for the determination of residual stresses.
- Automation of complex simulation workflows in Code_Aster using Python scripts.

Senior Simulation Engineer   *April 2021 – April 2023*

RHI Magnesita (Leoben – Austria)

- Thermo-mechanical finite element simulations applied to refractory materials.
- Development of user subroutines (UMATs) to implement custom material behavior in Abaqus.
- Automation of complex simulation workflows in Abaqus and Code_Aster using Python scripts.
- Design of mechanical tests for identification of material parameters and validation of simulation results.
- Management of long-term research projects in cooperation with internal and external partners.

Development Engineer   *August 2013 – April 2018*

RHI Magnesita (Contagem – Brazil)

- Thermo-mechanical modeling using the finite element method with Ansys Mechanical Workbench.
- Development and implementation of material laws in commercial finite element software, in cooperation with Brazilian and European universities.

Education

PhD – Mechanical Engineering   *April 2018 – December 2022*

University of Orléans (France)

- Development and implementation of creep constitutive models in Abaqus using UMAT subroutines.
- Development of optical instrumentation algorithms for the inverse identification of creep material properties.
- Mechanical tests at high temperatures (up to 1300 °C).

Master's Degree – Structural Engineering   *August 2015 – September 2017*

Federal University of Minas Gerais (Belo Horizonte – Brazil)

- Physically nonlinear modeling of refractory materials at high temperatures considering damage effects.

Specialization – Structural Analysis Using the Finite Element Method   *March 2015 – June 2017*

ESSS Institute (Ansys Elite Channel Partner in South America – São Paulo – Brazil)

Bachelor's Degree – Mechanical Engineering   *August 2008 – July 2013*

Federal University of Minas Gerais (Belo Horizonte – Brazil)

Skills

Technical Skills			Languages
Finite element analysis	Abaqus	Ansys	Portuguese (native)
Code_Aster	Optimization	Multiphysics modeling	English (fluent – C1)
Experimental mechanics	Python	C++	French (professional proficiency)

Hobbies

Playing sports, reading, travelling, 3D printing.