Sandor Dobrentei MSc.

Mechanical Engineer

CONTACT

sandor.dobrentei@cae-service.hu

+36 70 331 8696

HUNGARY

PROFILE

- ✓ **12 years** demonstrated history of working in **automotive, space and machine industry**
- ✓ **strong FEA skills** (HyperWorks, NASTRAN, Marc, PERMAS, Optistruct)
- ✓ **advanced programming skills in Fortran**
- ✓ **FEA analysis experience in structural static, dynamic, thermal and fatigue**
- ✓ **strong theoretical background in analytical and numerical methods**
- ✓ **MSc in Mechanical engineering, course of applied mechanics**
- ✓ **Advanced language skills in English**

FEA SKILLS

- static calculations
- dynamic simulations
- linear and non-linear models
- steel structures
- fatigue life prediction
- topology optimization
- coupled thermal-structural models

SOFTWARE SKILLS

- NASTRAN
- Hypermesh
- HyperGraph
- HyperView
- Marc Mentat
- Fortran
- PERMAS
- Wolfram Mathematica

WORK EXPERIENCE

QUADRATECH LTD.
Hungary
08.2012 – 09.2019.

SIMULATION ENGINEER FULL/PART-TIME EMPLOYEE

Activity
- FE simulations on exhaust systems for different load conditions including static loads and sine excitation
- Temperature distribution calculations
- Analysis –test measurement comparison

CAE-SERVICE LTD.
Hungary
10.2017 – present

SIMULATION ENGINEER, HEAD OF FEA

Activity
- Stress calculation on steel structures like conveyor crane frames, solar panel holders & industrial storing shelf
- Fatigue life calculation of trailer wheel hub

PULI SPACE TECHNOLOGIES LTD.
Hungary
09.2017 - present

SIMULATION ENGINEER CONTRACT

Project ***Lunar Rover, "Water Snooper"***

Activity
- Structural dynamic simulations on the rover body for sine and random excitation, RSA analysis
- Shape optimization of frame parts

CALAMUS ELECTRIC PRIVATE LTD.
Mumbai, IN
04.2019-08.2019

SIMULATION ENGINEER CONTRACT

Project ***CALAMUS ONE bycicle***

Activity
- Fatigue analysis of bicycle frame

AGRO LINE LTD.
Hungary
01.2020 – 03.2020

SIMULATION ENGINEER CONTRACT

Activity
- Non-linear simulation of deep drawing processes

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SKILLS

FEA

- 12 years demonstrated history of working in automotive, aerospace and machine industry
- Thorough knowledge and understanding of background theory
- Deep knowledge in analytical methods of structural mechanics including elasticity and plasticity
- Programming skills for specialized result processing

COMPOSITES

- Basic knowledge in composite materials and failure models

TOPOLOGY OPTIMIZATION

- Topology optimization experience in OPTISTRUCT

IT

- Advanced user of Microsoft Office package

TEAMWORK

- Have been involved in several design projects which required high level of teamwork, and great spectrum of problem solving skills

LANGUAGE

- English C1

EDUCATION

BUDAPEST UNIVERSITY OF TECHNOLOGY AND ECONOMICS

PhD student

2023-present • Research field: Thermomechanical and fatigue analysis of railway wheel-rail contact

MSc. Applied Mechanics

2009-2011 • Thesis: Stress Analysis of Heat Exchanger Pressure Vessel

BSc. Mechanical Engineering

2005-2009 • Thesis: Design of Plain Bearing for Hot Rolling Cylinder

OTHER TRAININGS & QUALIFICATIONS

2019 • NAFEMS Non-linear FEA course

2021 • NAFEMS Advanced Dynamic FEA course

2022 • NAFEMS Fatigue & Fracture Mechanics in FEA

PUBLICATIONS

Döbrentei S. and Váradi K., “Analytical validation of moving heat source defined in finite element environment - Conference paper,” pp. 53–56, 2023, [Online]

S. Döbrentei and P. T. Zwierczyk, “Analytical validation of the finite element model of railway wheel-rail rolling-sliding contact,” pp. 201–207, 2024, [Online]

S. Döbrentei and P. T. Zwierczyk, “Prediction of crack plane orientation in railway wheels for different braking conditions,” Tribology International, vol. 200, Dec. 2024, [Online]

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