



MĂDĂLINA-IOANA BLAJ

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PhD Candidate - Domain: Industrial Engineering

SUMMARY

Highly motivated PhD candidate with 7.5 years of experience in aerospace engineering. Proven ability to conduct rigorous literature reviews, formulate research questions, and analyze complex datasets. Eager to contribute to advancements of additive manufacturing, considering my structural engineering expertise. Strong collaborator with a demonstrated ability to work effectively in cross-functional teams.

WORK EXPERIENCE

Aerospace Stress Engineer, CONSARO ENGINEERING SRL, Braşov, RO July 2016 - January 2024

CONSARO ENGINEERING SRL provides engineering services in the aerospace, automotive, and mechanical engineering industries. The customers are primarily suppliers to leading manufacturers of civil airliners and civil spacecraft systems in Germany, France, the UK, US etc.

- Design and strength analysis of lightweight structures using analytical methods and detailed FE analyses (linear/nonlinear) based on given specifications;
- Performance of optimization tasks considering aspects of strength, stability, and damage tolerance;
- Coordination of technical content within the development project in the team and with superiors;
- Coordination with customers;
- Documentation/presentation of activities and results according to specific requirements and preparation of technical reports.

EDUCATION

PhD Candidate - Industrial Engineering

Oct 2018 - Present

Transilvania University of Braşov

Research on Parts Manufacturing from Composite Materials with Short Carbon Fibers using FDM Process

Published papers:

1. **Mădălina-Ioana Blaj**, Sebastian Marian Zaharia, Cristin Olimpiu Morariu, Alin Pop, Gheorghe Oancea, Tensile Behavior of Parts Manufactured Using a Material Extrusion Process from a Filament with Short Carbon Fibers and PET Matrix, Processes, IF 3.5 (2024).
2. **Mădălina-Ioana Blaj**, Sebastian Marian Zaharia, Alin Pop, Gheorghe Oancea, Tensile Properties and Manufacturing Defectives of Short Carbon Fiber Specimens Made with the FDM Process, Materiale plastice, IF 0.782(2021), Presented at Conference PPE21;
3. **Mădălina-Ioana Blaj**, Gheorghe Oancea, Parametric design of a complex part in a FEM environment MATEC Web of Conferences, presented at conference indexed Clarivate ISI MTEM2019 - Prize for the Excellent Paper at the CAD-CAM I Section;
4. **Mădălina-Ioana Blaj**, Gheorghe Oancea, Fused deposition modelling process: A literature review, - IOP Conference Series Materials Science and Engineering, presented at CoSME Conference (indexed SCOPUS);
5. **Mădălina-Ioana Blaj**, Gheorghe Oancea, FEM hypothesis which can be applied for FDM Applications, presented at conference AFASES – Air Force Academy “Henri Coandă”

Prize on the PhD Section of the “Absolvenți în fața Companiilor” Conference for the paper “Manufacturing of short carbon fiber composite parts using the FDM process - Aerospace applications”.

Blaj

Master of Science - Innovative Manufacturing Engineering**Oct 2012 - July 2016**

Transilvania University of Braşov - Faculty of Industrial Engineering and Technological Management

Acquired skills in using current strategies and techniques in manufacturing engineering for the implementation of the CAD/CAPP/CAM concepts, simultaneous engineering, industry 4.0, as well as scientific research skills.

Bachelor Degree - Aerospace Engineering - 9.68/10**Oct 2016 - July 2018**

Transilvania University of Braşov - Faculty of Industrial Engineering and Technological Management

- multilateral training in the field of aircraft design, manufacture, maintenance, management of manufacturing processes and quality;
- acquired skills in using software applications to solve tasks specific to aerospace engineering, the design of the shape and the evaluation of the performance, stability and maneuverability of aircraft, the design and testing of the primary metal and composite structure elements, the technological design, planning and operation of manufacturing systems etc.

VOLUNTEERING EXPERIENCE

ocMaker Challenge, OC Pathways, CA, USA**Apr 2024 - May 2024**

- Jury for ocMaker Challenge Virtual Competition - student teams from pre kindergarten through high school - STEAM Projects

"Asociația Suport - Regiunea Centru" NGO, Braşov, RO**Aug 2020 - Nov 2022**

- Technical Director - "Avgeek - Aerospace Challenge"
- Design & Additive Manufacturing Trainer for children at Learnex
- Trainer for children for MoonCamp competition organized by European Space Agency

ADDITIONAL INFORMATION

- **Languages:** Romanian, English (Advanced), Chinese (Beginner);
- **Awards/ Certificates:**
- Six Sigma - Green Belt - Onward to Opportunity (O2O) Program D'Aniello Institute for Veterans and Military Families - USA - May 2024 - Present
- Psycho-pedagogical Training - Transilvania University - 2022 - Present
- Entrepreneurial skills Certificate - COR Code 112029 - Ministry of Labor and Social Protection - 2022
- Trainer Certificate - COR Code 242401 - Ministry of Labor and Social Protection - 2022
- Chinese Proficiency Test (HSK 1) - Confucius Institute, 2017
- "Şef de promoție" (Valedictorian) - Faculty of Industrial Engineering and Technological Management - 2016
- First Prize - Scientific Research Session Conference for Students - Aerospace Engineering Section - "Design of a VTOL UAV for emergency situations" - 2016
- Third Prize - "Chinese Bridge" Chinese Proficiency Competition - 2016
- Excellence Scholarship - Schaeffler Romania - Scholarship obtained through competition. - 2015
- Chinese Language and Culture Study and Experience - International School of Shenyang Jianzhu University, China, (Scholarship from Transilvania Univeristy), July 2014

