Davide **Biagini**

Aerospace Engineering Ph.D. Student

Profile

PhD candidate at TUDelft Aerospace Engineering, investigating the compression after impact fatigue phenomenon in carbon fiber reinforced polymers from a numerical and experimental point of view.
Interested in the physical understanding of fracture and fatigue.

Education

Alma Mater Studiorum, University of Bologna *Forli, Italy*

M.Sc. diploma cum laude in Aerospace Engineering *March 2020*

- Final thesis "Fatigue properties evaluation of Lattice Structures"

Alma Mater Studiorum, University of Bologna *Forli, Italy*

B.Sc. diploma in Aerospace Engineering *Oct. 2017*

- Final thesis "Homogenization techniques in Lattice Structures"

Liceo Scientifico A.Tassoni *Modena, Italy*

High school scientific diploma *Jul. 2014*

Skills

Programming	Python, Fortran, Matlab, Latex
Software	Abaqus CAE imput file programming in Python, creation of material user subroutines for Abaqus, Vallen acoustic emission acquisition software, Dolphicam 2 system for ultrasound inspection, MTS machine software to program fatigue tests
Languages	English (IELTS certificate level C1), Italian

Experience

TU Delft, Aerospace Engineering *Delft, The Nethelands*

Ph.D. Candidate *Apr. 2020 - current*

- Implementation of numerical models to capture buckling and delamination propagation in CFRP using Abaqus CAE
- Manufacturing quasi-isotropic layups of CFRP and low velocity impact testing with drop-weight tower
- Fatigue after impact testing using different SHM techniques like Acoustic emissions, Digital image correlation, Ultrasonic Cscan
- Signal analysis and machine learning strategies applied to the classification of Acoustic Emission signal for damage modes separation

TU Delft, Aerospace Engineering *Delft, The Nethelands*

Internship and Master Thesis *Aug. 2019 - Dec. 2019*

- Implemented a Python code to evaluate lattice structures fatigue behaviour using a simplified beam element progressive failure approach
- Based on the model, proposed new solutions to achieve a damage tolerant design of lattice structures by retarding the damage localization

Teaching activities

Main supervisor *The Netherlands*

TUDELFT *March. 2022 - July. 2022*

- B.Sc. second year course of Data Analysis

Co-Supervisor *The Netherlands*

TUDELFT *March. 2021 - July. 2021*

- Co-supervised a group of ten bachelor students in a design synthesis project.

Presentations

23th European conference of fracture *Madeira, Portugal*

PRESENTER FOR <'HOW SHOULD WE DEFINE COMPRESSION AFTER IMPACT FATIGUE GROWTH IN CFRP?' > *Jul. 2022*

- Presentation of experimental results regarding fatigue CAI

Tudelft Ph.D. event *Delft, The Netherlands*

POSTER PRESENTATION <'TOWARDS SLOW GROWTH DESIGN PHILOSOPHY AGAINST CAI FATIGUE OF CFRP' > *Apr. 2021*

Scholarships

2019 **1th,** Scolarship "Franco Persiani" for merit students, Rotary Club Forli *Forli, Italy*