Davide Biagini

Profile

Postdoctoral researcher at TUDelft Aerospace Engineering, investigating the fatigue behavior of composite materials.

Education

March 2020 – October 2024 **Technical University of Delft**, *Aerospace Engineering*, Ph.D.
Delft, The Netherlands

September 2017– March 2020 **University of Bologna, Campus Forlì**, *Aerospace Engineering*, Master of Science Degree, cum Laude.
Forlì, Italy

September 2014– July 2017 **University of Bologna, Campus Forlì**, *Aerospace Engineering*, Bachelor Degree, Forlì, Italy.

Experience

June 2024 - Ongoing **TU Delft, faculty of Aerospace Engineering**, PostDoc in D-Standard project, Delft, The Nethelands.
Study of fiber orientation and environmental effect on the CFRP fatigue behavior

April 2020– March 2024 **TU Delft, faculty of Aerospace Engineering**, Ph.D. Candidate, Delft, The Nethelands.
- Implementation of numerical models to capture buckling and delamination propagation in CFRP using Abaqus CAE.
- Fatigue after impact testing using different SHM and NDI techniques like acoustic emissions, digital image correlation and ultrasonic c-scan.
- Signal analysis and machine learning strategies are applied to classify acoustic emission signals to separate damage modes.

September - December 2019 **TU Delft, faculty of Aerospace Engineering**, Internship and M.Sc. Thesis, Delft, The Nethelands.
Implemented a Python code to evaluate lattice structures fatigue behavior using a simplified beam element progressive failure approach

Conference presentations

July 2022 **European Conference of Fracture**, *Madeira, Portugal*.
How should we define compression after impact fatigue growth in CFRP?

June 2023 **Comptest**, *Girona, Spain*.
CAI fatigue testing in CFRP: is the test representing what happens in real structures?

July 2023 **International Committee on Aeronautical Fatigue and Structural Integrity**, *Delft, The Netherlands*.
Compression after impact fatigue damage growth in CFRP

Publications

Davide Biagini, John-Alan Pascoe, René Alderliesten, Investigating apparent plateau phases in fatigue after impact damage growth in CFRP with ultrasound scan and acoustic emissions, International Journal of Fatigue, Volume 177,2023,107957, doi.org/10.1016/j.ijfatigue.2023.107957

Biagini D, Pascoe J-A, Alderliesten R. Investigation of compression after impact failure in carbon fiber reinforced polymers using acoustic emission. Journal of Composite Materials. 2023;57(10):1819-1832. doi:10.1177/00219983231163853

D. Biagini, J.A. Pascoe, R.C. Alderliesten, Experimental investigation of fatigue after impact damage growth in CFRP, Procedia Structural Integrity,Volume 42,2022,Pages 343-350,ISSN 2452-3216,https://doi.org/10.1016/j.prostr.2022.12.042.

Teaching

2022 **TU Delft, faculty of Aerospace Engineering**, *Main supervisor*.
Bachelor course in data analysis

2021 **TU Delft, faculty of Aerospace Engineering**, *Co-supervisor*.
Bachelor project 'design synthesis exercise'

Skills

Languages	Python, Matlab, Fortran
Frameworks	Keras, Tensorflow
FE tools	Abaqus cae
Utilities	Anaconda, Git, Latex
Communication	English (C1), Italian (native)