



Luca Di Stasio

Scientist & Engineer

- D-CPR Certified (FR, SE)
- Driver License Cat. B (IT)
- Italian & EU citizen
- Thuwal, Saudi Arabia
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Key Qualifications

- Ph.D., Materials Science
- Ph.D., Composite Materials
- M.Sc., Space Engineering
- M.Sc., Mechanical Engineering
- B.Sc., Aerospace Engineering
- PE License, Industrial Engineering
- CNC Qualified Technician
- French HE Teaching Qualification
- Swedish HE Teaching Qualification

Key Experience

- Research & Development (9+ yrs)
- Data Analysis (9+ yrs)
- Software Development (8+ yrs)
- Project Supervision (3+ yrs)
- Project Funding & Budgeting (3+ yrs)
- Scholarly peer-review (3+ yrs)
- Technical Writing (9+ yrs)
- Teaching (11+ yrs)

Work Experience


Innovation, Research & Development, Design, Simulation

- 2020- **Postdoctoral Researcher** KAUST (Thuwal, Saudi Arabia)
Continuum & Computational Mechanics of Materials, PSE (*Prof. Brian Moran*)
Project(s): Characterization of crack tip fields in 3D hyperelastic bodies, Cohesive crack in thin Neo-Hookean sheets, Iterative contour integral-based algorithms for identification of crack tip parameters.
Working language(s): English
- 2018- **Early stage Researcher** Luleå tekniska universitet (Luleå, Sweden)
2019 Polymeric Composite Materials, TVM (*Prof. Janis Varna*)
Project(s): Mechanics of extreme thin composite layers for aerospace applications, Effect of aging on transverse cracking in GFRPC, Temperature and loading rate effect on transverse cracking in GFRPC
Working language(s): Swedish, English
- 2015 - **Early-stage Researcher** Université de Lorraine (Nancy, France)
2017 Mechanics of Materials, SI2M, IJL (*Prof. Zoubir Ayadi*)
Project(s): Mechanics of extreme thin composite layers for aerospace applications
Working language(s): French, English
- 2013 - **Early-stage Researcher** ETH Zürich (Zürich, Switzerland)
2015 Computational Physics for Engineering Materials, D-BAUG (*Prof. Hans Herrmann*)
Projects: Fluid-structure interaction on deformable surfaces, Multi-scale modeling of wood
Working language(s): German, English
- 2012 - **Research Assistant** IMDEA Materials Institute (Madrid, Spain)
2013 Structural Composites (*Dr. Claudio Lopes*)
Project(s): Loading rate effects on interlaminar fracture toughness in advanced CFRP.
Working language(s): Spanish, English
- 2012 **Research Assistant** Drexel University (Philadelphia, USA)
Mesoscale Materials (*Prof. Jonathan Spanier*) & BioMechanics (*Prof. Sorin Siegler*)
Project(s): Design of nano-resonators for environmental electromagnetic field detection, Talus morphology and its relationship to the kinematics of the ankle joint.
Working language(s): English

Supervision, Mentorship & Teaching

- 2020- **Guest Lecturer** Université de Lorraine (Nancy, France)
2021 *Format*: Distance learning
Subject(s): Solid Mechanics
Working language(s): French
- 2018- **University Teaching Assistant** Luleå tekniska universitet (Luleå, Sweden)
2019 *Format*: Face-to-face learning
Subject(s): Elasticity, Rheological models, Fracture mechanics, Experimental methods, Mechanics of Composite Materials, Laminate Analysis, Finite Element Method.
Working language(s): English
- 2016 - **University Teaching Assistant** Université de Lorraine (Nancy, France)
2017 *Format*: Face-to-face learning
Subject(s): Mechanics of materials, Elasticity, Rheological models, Fracture mechanics, Experimental methods, Mechanics of Composite Materials, Finite Element Method
Working language(s): French
- 2014 - **Personal Tutor** The Learning Center Zürich (Zürich, Switzerland)
2015 *Format*: Face-to-face learning
Subject(s): Mathematics, Physics, Statistics, Econometrics, Java programming
Working language(s): German, English
- 2011 **Personal Tutor** Politecnico di Milano (Milano, Italy)
Format: Face-to-face learning
Subject(s): Calculus
Working language(s): Italian
- 2009 - **Learning Support Teacher** Istituto Sacro Cuore (Milano, Italy)
2011 *Format*: Face-to-face learning
Subject(s): Mathematics, Physics, Biology, Italian Language and Literature, Latin Language and Literature, History
Working language(s): Italian

Languages

 Italian (mother tongue)	
Speaking	● ● ● ● ●
Writing	● ● ● ● ●
Reading	● ● ● ● ●
 English (fluent)	
Speaking	● ● ● ● ●
Writing	● ● ● ● ●
Reading	● ● ● ● ●
 French (fluent)	
Speaking	● ● ● ● ●
Writing	● ● ● ● ●
Reading	● ● ● ● ●
 Spanish (fluent)	
Speaking	● ● ● ● ●
Writing	● ● ● ● ●
Reading	● ● ● ● ●
 German (satisfactory)	
Speaking	● ● ● ● ●
Writing	● ● ● ● ●
Reading	● ● ● ● ●
 Swedish (rudimentary)	
Speaking	● ● ● ● ●
Writing	● ● ● ● ●
Reading	● ● ● ● ●
 Russian (rudimentary)	
Speaking	● ● ● ● ●
Writing	● ● ● ● ●
Reading	● ● ● ● ●

Technical Skills

 Mechanical & Electrical Engineering	
Creation of Drawings & Specifications	
Circuit Design & Assembly	
Milling, Turning, Drilling, Welding	
Operating CNC & Precision Machines	
 Composites Science & Technology	
Hand layup, Resin Molding & Casting	
Specimen Cutting & Polishing	
UTM Testing, Strain Measurements	
Optical & Digital Microscopy, SEM	
 Project Management	
Goals & Specifications Formulation	
Planning, Scheduling & Supervision	
Funding & Budgeting	
 Technical Writing & Communication	
Technical Reports, Scientific Articles	
Seminar & Conference Presentations	
Meeting, Video-Conferencing	

Organizational, Administrative and Institutional Activities

2019	CompTest 2019 organising committee (Luleå, Sweden)
	9th International Conference on Composite testing and model identification
	Design and creation of interactive book of abstracts, creation and design of conference proceedings website
	<i>Working language(s)</i> : English
2008 - 2011	Student Representative Politecnico di Milano (Milano, Italy)
	Student representative in the board of the Department of Aerospace Engineering and in the board of the School of Industrial Engineering at Politecnico di Milano
	<i>Working language(s)</i> : Italian

Volunteer Work

currently	Trainer The Carpentries (CA, USA)
	Conducting workshops to teach pedagogical principles and innovative teaching practices to researchers delivering technical workshops on coding and data science
	<i>Working language(s)</i> : English
currently	Instructor The Carpentries (CA, USA)
	Conducting workshops to teach foundational coding and data science skills (Unix Shell, Git, Python, R) to researchers
	<i>Working language(s)</i> : English

Memberships

2014-	Ordine degli Ingegneri della Provincia di Milano (Society of Licensed Engineers of Milan)
2017-	The Carpentries

Publications

Peer-reviewed journal publications

2021	Large deformation near a crack tip in a fiber-reinforced neo-Hookean sheet with discrete and continuous distributions of fiber orientations <i>Theoretical and Applied Fracture Mechanics (IF 4.017)</i> , doi: 10.1016/j.tafmec.2021.103020
2020	Effect of the proximity to the 0°/90° interface on Energy Release Rate of fiber/matrix interface crack growth in the 90°-ply of a cross-ply laminate under tensile loading <i>Journal of Composite Materials (IF 2.591)</i> , doi: 10.1177/0021998320912810
2019	Influence of microstructure on debonding at the fiber/matrix interface in fiber-reinforced polymers under tensile loading Doctoral Thesis. Luleå University of Technology (Luleå, Sweden) and Université de Lorraine (Nancy, France)
2019	Finite Element solution of the fiber/matrix interface crack problem: convergence properties and mode mixity of the Virtual Crack Closure Technique <i>Finite Elements in Analysis and Design (IF 2.972)</i> , doi: 10.1016/j.finel.2019.103332
2019	Growth of interface cracks on consecutive fibers: on the same or on the opposite sides? Proceedings of the 12 th International Conference on Composite Science and Technology - Sorrento, Italy - May 8-10 th , 2019 <i>Materials Today: Proceedings</i> , doi: 10.1016/j.matpr.2020.06.410
2019	Energy release rate of the fiber/matrix interface crack in UD composites under transverse loading: debond-debond and debond-free boundary interactions <i>Theoretical and Applied Fracture Mechanics (IF 4.017)</i> , doi: 10.1016/j.tafmec.2019.102251
2018	Effect of boundary conditions on microdamage initiation in thin ply composite laminates Proceedings of the ECCM18 - 18 th European Conference on Composite Materials - Athens, Greece - June 24-28 th , 2018
2013	Experimental, Analytical and Numerical Investigation of Loading Rate Effects on Mode I, Mode II and Mixed Mode I-II Delamination in Advanced CFRP Master Thesis, Master of Science in Space Engineering. Politecnico di Milano (Milano, Italy)

Computer Skills

- </> Operating Systems
 - Linux (Ubuntu, OpenSUSE, CentOS)
 - Windows (>95), Mac OS X (>10.6)
- </> Languages
 - C/C++, Python, Julia, Java, Fortran
 - VBA, Javascript, HTML(5), CSS
 - Bash, Windows Batch Scripting
- </> High Performance Computing
 - OpenMP, MPI, CUDA, OpenACC
- </> Scientific Computing & Statistics
 - Numpy, Scipy, R, Stata
 - Matlab, Mathematica, Octave, Maple
 - Excel, G-Sheets, LibreOffice Calc
- </> CAD, CAM, CAE
 - Autocad, Solid Edge, G-code
 - Abaqus, Ansys, Comsol Multiphysics
 - CalculiX, FEniCS, Code_Aster
 - OpenFOAM, Thermal Desktop
- </> Web Development
 - AJAX, JQuery, Bootstrap, Angular
 - React, D3, Node.js, Npm
- </> Databases
 - SQL, MongoDB
- </> Versioning
 - Git, Github
- </> Writing & Reporting
 - Latex, Tikz, Beamer, Word, Powerpoint

Education

Higher Education

- 2015 - **Joint European Doctoral Programme in Advanced Materials Science and Engineering (DocMASE)**
Luleå tekniska universitet (Luleå, Sweden) and Université de Lorraine (Nancy, France)
PhD in Polymeric Composite Materials (2019), Luleå tekniska universitet
PhD in Materials Science (2019), Université de Lorraine
Working language(s): English, French, Swedish
- 2013 **Professional License, Industrial Engineering**
Politecnico di Milano (Milano, Italy)
Working language(s): Italian
- 2010 - **Double EU-US Master Programme EAGLES (Engineers as Global Leaders for Energy Sustainability)**
Politecnico di Milano (Milano, Italy), Drexel University (Philadelphia, USA) and Universidad Politécnica de Madrid (Madrid, Spain)
MSc in Space Engineering, 110/110 (2013), Politecnico di Milano
MSc in Mechanical Engineering, 4/4 (2012), Drexel University
Working language(s): Italian, English, Spanish
- 2007 - **Bachelor of Science in Aerospace Engineering, 110/110**
2010 Politecnico di Milano (Milano, Italy)
Working languages(s): Italian
- 2002 - **Scientific High School Diploma, 100/100 cum Laude**
2007 Scientific High School Istituto Sacro Cuore (Milano, Italy)
Working languages(s): Italian
- 1997 - **Cello Studies**
2007 Municipal School of Music (Cernusco s/N, Italy)
Working language(s): Italian

Selected Courses & Seminars

- 2020 **Software Carpentry Trainer Training Program**
The Carpentries (California, USA)
Remote Interactive Course and Certificate of Completion
Working language(s): English
- 2018 - **Qualifying Course for University Teachers**
2019 Luleå tekniska universitet (Luleå, Sweden)
In-Class Course and Verified Certificate of Completion
Working language(s): English
- 2017 **Software Carpentry Instructor Training Program**
The Carpentries (California, USA)
Remote Interactive Course and Certificate of Completion
Working language(s): English
- 2016 **Project Management MOOC - Classic Course**
Centrale Lille and Unow (Lille, France)
Online MOOC and Certificate of Completion
Working language(s): French
- 2015 **Corporate Social Responsibility (CSR) and Value Creation**
Audencia Nantes Business School (Nantes, France)
Online MOOC and Verified Certificate of Completion
Working language(s): English
- 2015 **2015 Summer School on Effective High Performance Computing**
CSCS and Università della Svizzera Italiana (Lugano, Switzerland)
In-Class Course, Hands-on Training and Certificate of Completion
Working language(s): English

Vocational Training

- 2009 **CNC Technician**
Centro di Formazione Professionale Salesiano Don Bosco (Milano, Italy)
In-Class Course, Hands-on Training and Certificate of Competence
Working language(s): Italian

Professional Honors & Awards

- 2019 **Wallenberg Jubileumsanslaget Travel Grant**
Knut and Alice Wallenberg Foundation
Travel expenses for the participation to the *12th International Conference on Composite Science and Technology*
- 2015 - **Erasmus Mundus Fellowship**
2018 European Commission
Salary and travel expenses for the participation to the *Joint European Doctoral Programme in Advanced Materials Science and Engineering (DocMASE)*
- 2015 **Academic Excellence Award**
BCC (Banca di Credito Cooperativo) di Cernusco s/N (now BCC di Milano) (Milano, Italy)
Award for excellence in graduate studies at Politecnico di Milano (Milano, Italy)
- 2013 **PEGASUS award**
PEGASUS - The European Network of Excellence in Aerospace Engineering Education
Statement of recognition of special achievements in European cooperation through working abroad for academic research or industrial development projects
- 2012 - **Erasmus Fellowship**
2013 European Commission
Salary and travel expenses to conduct a research project at IMDEA Materials Institute (Madrid, Spain), as part of the *Double Master Degree Program EAGLES (Engineers as Global Leaders for Energy Sustainability)*
- 2011 - **EU-US Atlantis Program Fellowship**
2012 European Commission and U.S. Department of Education
Full tuition, salary and travel expenses to conduct graduate studies at Drexel University (Philadelphia, USA), as part of the *Double Master Degree Program EAGLES (Engineers as Global Leaders for Energy Sustainability)*
- 2012 **Academic Excellence Award**
BCC (Banca di Credito Cooperativo) di Cernusco s/N (now BCC di Milano) (Milano, Italy)
Award for excellence in undergraduate studies at Politecnico di Milano (Milano, Italy)
- 2007 - **Merit-based tuition fees exemption**
2010 Politecnico di Milano (Milano, Italy)
Merit-based partial exemption from tuition fees to conduct undergraduate studies at Politecnico di Milano (Milano, Italy)
- 2007 **Academic Excellence Award**
BCC (Banca di Credito Cooperativo) di Cernusco s/N (now BCC di Milano) (Milano, Italy)
Award for excellence in high school studies at Scientific High School Istituto Sacro Cuore (Milano, Italy)
- 2007 **Academic Excellence Award**
Ministero dell'Istruzione, dell'Università e della Ricerca (Italian government)
Award for excellence in high school studies at Scientific High School Istituto Sacro Cuore (Milano, Italy)