



# Luca Di Stasio

## Researcher & 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
- French HE Teaching Qualification
- Swedish HE Teaching Qualification
- CNC Qualified Technician

## 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







### Research & Development

- 2020- **Postdoctoral Researcher** KAUST (Thuwal, Saudi Arabia)  
Continuum & Computational Mechanics of Materials, PSE  
*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 Group, TVM  
*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 Group, SI2M, IJL  
*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 Group, D-BAUG  
*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 Group  
*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 Laboratory & BioMechanics Laboratory  
*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



### Teaching & Supervision

- 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 - **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 **Tutor** Politecnico di Milano (Milano, Italy)  
*Format:* Face-to-face learning  
*Subject(s):* Calculus  
*Working language(s):* Italian
- 2009 - **Tutor** Scientific High School 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	● ● ● ● ●
	English (fluent)	
	Speaking	● ● ● ● ●
	Writing	● ● ● ● ●
	French (fluent)	
	Speaking	● ● ● ● ●
	Writing	● ● ● ● ●
	Spanish (fluent)	
	Speaking	● ● ● ● ●
	Writing	● ● ● ● ●
	German (satisfactory)	
	Speaking	● ● ● ● ●
	Writing	● ● ● ● ●
	Swedish (rudimentary)	
	Speaking	● ● ● ● ●
	Writing	● ● ● ● ●
	Russian (rudimentary)	
	Speaking	● ● ● ● ●
	Writing	● ● ● ● ●

## 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	

## Institutional and Administrative Activities

2019	<b>CompTest 2019 organising committee</b> (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	<b>Student Representative</b> 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	<b>Trainer</b> 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	<b>Instructor</b> 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

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</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</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</i> , doi: 10.1016/j.finela.2019.103332
2019	Growth of interface cracks on consecutive fibers: on the same or on the opposite sides? Proceedings of the 12 <sup>th</sup> International Conference on Composite Science and Technology - Sorrento, Italy - May 8-10 <sup>th</sup> , 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</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 <sup>th</sup> European Conference on Composite Materials - Athens, Greece - June 24-28 <sup>th</sup> , 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

# 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)