



# 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

## 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.  
*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, Laminates 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

# Computer Skills

- </> Operating Systems
  - Linux (Ubuntu, OpenSUSE, CentOS)
  - Windows (>95), Mac OS X (>10.6)
- </> Languages
  - C, C++, Python, Perl, 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

## Institutional and Administrative 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  
*Working language(s)*: English
- 2008 - **Student Representative** Politecnico di Milano (Milano, Italy)  
2011 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  
*Working language(s)*: 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  
*Working language(s)*: English
- currently **Instructor** The Carpentries (CA, USA)  
Conducting workshops to teach foundational coding and data science skills (Unix Shell, Git, Python, R) to researchers  
*Working language(s)*: English

## 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)

# Education

## Higher Education

- 2015 - **Joint European Doctor of Philosophy Degree 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 Master of Science Degree EAGLES (Engineers as Global Leaders for Energy Sustainability)**  
2013 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

- 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

## Memberships

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

## 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

## 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 ● ● ● ● ●

## Publications

- 2021 Large deformation near a crack tip in a fiber-reinforced neo-Hookean sheet with discrete and continuous distributions of fiber orientations  
*Theoretical and Applied Fracture Mechanics*, 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  
*Journal of Composite Materials*, 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  
*Finite Elements in Analysis and Design*, 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
- 2019 Energy release rate of the fiber/matrix interface crack in UD composites under transverse loading: debond-debond and debond-free boundary interactions  
*Theoretical and Applied Fracture Mechanics*, 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.