



Ajinkya Rajendra Dusane

Current address: Piazza S.Francesco, 19, 55100 Lucca LU

E-mail: ajinkya.dusane@imtlucca.it ★ Telephone number: +39-3533547536

Place of birth: Dhule, India ★ Date of birth: 06-02-1995

 Google Scholar  LinkedIn

Current Position

Ph.D. candidate in Systems Science - Computer Science and Systems Engineering

IMT School for Advanced Studies Lucca

November 2020 - Ongoing

Current research: Phase-field viscoelastic modeling of fracture for polymer composites and their experimental characterization

Research unit: MUSAM Multi-scale Analysis of Materials - Director: Prof. Marco Paggi

Advisors: Prof. Marco Paggi, Prof. Pietro Lenarda

Research interest

Finite Element Method for Solid mechanics, Phase-field approach for fracture mechanics, Cohesive zone model for interface modeling, Experimental material characterization

Education

Master's degree in Mechanical System Design

Indian Institute of Technology Bhubaneswar

Master's degree program

August 2018 - July 2020

CGPA: 9.69/10.00

Thesis title: Continuum-based (cohesive zone method) crack growth studies in composite structures

Advisor: Dr. Patabhi Ramaiah Budarapu

Bachelor's degree in Mechanical Engineering

Vishwakarma Institute of Technology, Pune

Bachelor's degree program

July 2012 - June 2016

Final grade: 9.15/10.00

Capstone project: Design and fabrication of laundry folding machine

Advisor: Prof. Ashish Ramdas Mujumdar

Publications

A. R. Dusane, P. R. Budarapu, A. K. Pradhan, S. Natarajan, J. Reinoso, and M. Paggi,
Simulation of bridging mechanisms in complex laminates using a hybrid PF-CZM method
Mechanics of Advanced Materials and Structures 29, no. 28 (2022): 7743-7771

A. R. Dusane, P. Lenarda, and M. Paggi,
Computational modeling of viscoelastic backsheet materials for photovoltaics,
arXiv preprint arXiv:2305.17810 (2023)

A. R. Dusane, P. Lenarda, and M. Paggi,
Phase-field viscoelastic modeling of fracture for polymer composites and its experimental parameter identification,
Submitted for publication

Conferences/Workshops

A. R. Dusane, P. Lenarda and M. Paggi,
Modeling creep-assisted failure of viscoelastic materials based on the phase field approach
EMI 2023, International Conference Palermo, Italy, August 27 - 30, 2023
Speaker

A. R. Dusane, P. Lenarda and M. Paggi,

Phase field fracture models for viscoelastic materials

ECF23, European Conference on Fracture 2022, June 25 - July 1, 2022

Speaker

A. R. Dusane, P. R. Budarapu and A. K. Pradhan,

Crack growth studies in laminated composites using hybrid PF-CZM method

The 64th Congress of Indian Society of Theoretical and Applied Mechanics (ISTAM-2019)

Speaker

Project works

Mechanics of Lithium-ion Batteries

June 2019 - July 2020

Master's research review paper

Design and analysis of reciprocating compressor

Jan 2016 - June 2016

Bachelor's course project in Design of Mechanical Systems

Design and fabrication of multipurpose robotic arm

June 2013 - Dec 2013

Bachelor's course project in Robotics

Work experience

Teaching Assistant

Indian Institute of Technology Bhubaneswar

Tutor

August 2018 - July 2020

Course/Lab: Engineering Mechanics, CAD/CAM/CAE Lab, Material Testing Lab

- Tutored batch of 30 undergraduate students for a course on Engineering Mechanics
- Tutored batch of 15 undergraduate students for modeling using SOLIDWORKS, finite element analysis, and CFD simulations using ANSYS-Workbench, CAM through a CNC simulator
- Successfully performed Hardness testing, Tensile testing, Buckling experiments, and Torsional testing for batch of 15 undergraduate students under the Material Testing Lab.

Class representative

Indian Institute of Technology Bhubaneswar

Master's degree program

August 2018 - July 2020

Engineer

Project ANSP, DRDL, Hyderabad

Contractual trainee engineer

February 2017 - January 2018

Solid modeling, static and vibrational analysis of metallic components. Involved in QA/QC, team activities for product clearances, structural testing, and material management activities in the assembly of components.

Team member

Vishwakarma Institute of Technology, Pune

SAE-BAJA Team

2013-2014

Design and modeling of the steering system and roll cage fabrication for the SAE-BAJA vehicle

Other activities

• **Honors in Automobile Engineering**

Vishwakarma Institute of Technology, Pune

Additional course

June 2013- May 2016

Additional 20 credits earned comprising of 9 courses related to Automobile Technology under the guidance of *Prof. S. D. Chougule* along with bachelor's courses.

- Demonstrated Material Testing Lab Experiments to undergraduate students from different institutes on Open Day- 2020 at the School of Mechanical Sciences, Indian Institute of Technology, Bhubaneswar

- Actively participated in **Bright Night – European Researchers Night** at IMT School for Advanced Studies Lucca 2021-22 in organizing laboratories and other activities.

Awards/Certificates

- Awarded **Silver Medal** for being a school topper in the Indian Institute of Technology Bhubaneswar for the year 2020.
- Awarded **Best Student Award Batch of 2010** by M.E.S. Renavikar Madhyamik Vidyalaya, Ahmednagar, Maharashtra, in recognition of outstanding performance in curricular and extracurricular activities (2010).
- **Team member** VIT, SAE-BAJA Team who secured 33th rank for in All India SAE-BAJA 2013 Competition
- Won 3rd prize for Intra college drama competition for group in Vishwakarandak 2014-15 at Vishwakarma Institute of Technology, Pune

Technical skills

Programming Languages	Fortran, Python, Matlab, Latex, C
Programs	FEAP (Programmer Level), Abaqus (Programmer Level), FEniCS (User level), FreeFEM++ (User level), CATIA-V5 (User level)

Language proficiencies

Marathi, Hindi	Mothertongue
English	Level C2
Italian	Elementary