

CURRICULUM VITAE

Amit Kumar Rai
Ph.D. Solid Mechanics and Design
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OBJECTIVE

Seeking an opportunity for working as a professional in a challenging environment and to utilize my education and skills for growth of the organization

EDUCATION DETAIL

Qualification	University/board	College	Percentage
Ph.D. (July 2014 – March 2020) (Mechanical Engineering/Solid Mechanics and Design)	IIT	Indian Institute of Technology Kanpur	7.33(CPI)
M. Tech. (2008 - 10) (Applied Mechanics)	NIT	Motilal Nehru National Institute of Technology Allahabad	8.28(CPI)
B.Tech.(2003–07) (Mechanical Engineering)	U.P.T.U.	Kamla Nehru Institute of Technology Sultanpur	69.56
Intermediate(12 th)	U.P. Board	U.P. Inter College Varanasi	67
High School(10 th)	U.P. Board	S.S. Inter College Ballia	68.3

SCHOLASTIC ACHIEVEMENTS

- Defended my Ph.D. thesis titled **Nonlinear Vibrations of Thin Isotropic and Polar Orthotropic Circular Plates Under Moving Point Loads** on 12th March 2019.
- M.Tech. thesis on titled **Optimized Trajectory Planning for The Biped Robot**.
- Obtained the **GATE Fellowship** during the period 2008-10 in M.Tech. and in the period 2014-2019 in Ph.D.
- Delivered project presentation on **Simulation of double pendulum system** in MNNIT Allahabad in 2009.
- Attended **GYAN Course on Nonlinear Finite Element Method** conducted by MHRD in MNIT Jaipur.
- Delivered project presentation on **White Line Follower** in KNIT Sultanpur in 2007.

FOREIGN VISITS

- **Canada (Montreal)**: to present a research paper in 24th International Congress on Theoretical and Applied Mechanics (ICTAM), August 22-26, 2016.
- **USA (Ausin, Texas)**: to present a research paper in 15th U.S. National Congress on Computational Mechanics (USNCCM-15), July 28 - August 20, 2019.

PROFESSIONAL EXPERIENCE

- **Engineer Trainee, Bharat Pumps and Compressors Limited Naini, Allahabad** - 28 Jun 2005- 27 July 2005
 - Studied the Design and Manufacturing process of centrifugal and reciprocating pumps,
 - Analysed its operational and its assembly of the different components of centrifugal pump to assemble,
 - Studied the detailed analysis of rolling and forging operation of oxygen and nitrogen cylinders.
- **Engineer Trainee, Diesel Locomotive Works, Varanasi** - 10 July 2006 – 05 Aug 2006
 - Performed Fitting and Machining operation on the different components of the diesel locomotive,
 - Studied the Engineering Design of the locomotive wheel,
 - Analyzed the unconventional machining processes LASER Beam Machining of the locomotive wheel.

RESEARCH INTEREST

- **Research area:** Vibrations of Beams, Plates and Shells, Nonlinear dynamics, Computational mechanics.
- **Subject of interest:** Theory of Machine, Mechanics of solids, Engineering Mechanics, Finite element method, Applied dynamic and vibration, Continuum mechanics, Vibration of discrete and continuous systems, Engineering Mathematics.

RELEVANT COURSES

- Non-linear Vibration, Theory of Elasticity, Engineering Mathematics, Continuum Mechanics. Advance Solid Mechanics, Vibration in Continuum, Applied Dynamics and Vibration, Finite Element Analysis.

SELECTED PUBLICATIONS

- **Rai, Amit K.**, and Shakti S. Gupta. "Nonlinear vibrations of polar-orthotropic thin circular plate subjected to circularly moving point loads." *Composite Structures* (2020): 112953.
- **Rai, Amit K.**, and Shakti S. Gupta. "Nonlinear vibrations of a thin isotropic circular plate subjected to moving point loads." *Proceedings of the Institution of Mechanical Engineers, Part C: Journal of Mechanical Engineering Science* (2020): 0954406220976156.
- **Rai, Amit K.**, and Shakti S. Gupta. "Internally damped dynamic response of thin isotropic circular plate subjected moving harmonic loads." (Under preparation).
- **Rai, Amit K.**, and Shakti S. Gupta, "Vibration of simply supported circular plate subjected to moving point loads." (ICTAM, Montreal Canada-2016).
- **Rai, Amit K.**, and Shakti S. Gupta. "Vibration of orthotropic circular plate under moving point load." (IWCEM, Crown Plaza, Jaipur-2017).
- **Rai, Amit K.**, and Shakti S. Gupta. "Internally damped vibration of circular plate under sinusoidal moving point load." (UNSTAM, Chicago, USA - 2018).
- **Rai, Amit K.**, and Shakti S. Gupta. "Nonlinear vibration of circular plate under moving point loads." (USNCCM, Austin, Texas, USA. - 2019).

EXPERIENCE

- **Post Ph.D. Experience**
 - Presently working as faculty in the Dept. of Mechanical Engineering **IEST Shibpur, Howrah** since 17th Nov 2020.
 - Worked as Sr. Project Scientist in the Dept. of Aerospace Engineering **IIT Kanpur** May 2020 - Oct 2020.
 - Worked as Sr. Project Engineer in the Dept. of Mechanical Engineering **IIT Kanpur** Feb 2020 - May 2020.

• **Pre Ph.D. Experience**

- Worked as Assistant Professor in the department of Mechanical Engineering in **GCET Greater Noida** *Nov 2012 - Jun 2014.*
- Worked as Assistant Professor in the department of Mechanical Engineering in **VIET Ghaziabad** *Aug 2011 - Oct 2012.*
- Worked as Assistant Professor in the Dept. of Mechanical Engineering **ITSEC, Greater Noida** *Jan 2011 - July 2011*
- Worked as Lectures in the department of Mechanical Engineering in **GCE Gurgaon** *July 2007 – Jun 2008*

POSITION OF RESPONSIBILITY

- Worked as course counselor of first year Mechanical Engineering in **GCE Gurgaon** *July 2007 – Jun 2008*
- Worked as a hostel warden in **GCE Gurgaon** *July 2007 – Jun 2008.*

TECHNICAL SKILL

- **Languages:** C, LaTeX, MAPLE
- **Tools:** Abaqus, MATLAB, Ansys, SolidWorks.

EXTRA CURRICULAR ACTIVITIES

- Designed and fabricated Biped Robot in KNIT Sultanpur
- Won the cricket match and in TWARAN KNIT Sultanpur.

OTHER PARTICULARS

Date of Birth: 25/03/1984
Father's Name: Mr. Ashok Kumar Rai
Gender: Male
Nationality: Indian
Marital status: Married.

HOBBIES

- Teaching
- Listening Music.

NAME AND CONTACT DETAILS OF REFEREES

1. Dr. Shakti S. Gupta
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