Pushpit Kant

Graduate Student (*CGPA*: **9.1/10**),
Division of Mechanical Science

CONTACT

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COMPETENCIES

- C/C++
- MATLAB
- Mathematica
- Python (Basic)
- ANSYS
- MSC Adams
- SOLIDWORKS
- CATIA

SUBJECT EXPERTISE

- Linear Algebra
- Numerical Methods
- Differential Calculus
- Optimization
- Thermodynamics
- Heat Transfer
- Fluid Mechanics
- Finite Element Methods
- Probability & Statistics

ACHIEVEMENTS

- Secured All India Rank (**AIR**) - **14** in GATE-2018 Examination.
- Qualified IIT-JEE 2011 exam, was called for counselling.

PATENT

- A novel self-powered, intelligent Pipe Health Monitoring Robot (PHMR) for inspecting gas pipeline.(*Application no.*: 441/DEL/2015)

PUBLICATION

- T. Jaipurkar, P. Kant, S. Khandekar, B. Bhattacharya & S. Paralikar, "Thermo-Mechanical Design and Characterization of Flexible Heat Pipes", Applied Thermal Engineering (2017), Volume 126, 5 November 2017, Pages 1199-1208.

EDUCATION

Indian Institute of Science, Bengaluru
Master of Technology by Research,
Department of Chemical Engineering
(*Division of Mechanical Sciences*)

Indian Institute of Information Technology, Design and Manufacturing, Jabalpur
Bachelor of Technology,
Department of Mechanical Engineering

Graduate student, with a strong background in Mathematics and Numerical Modelling, looking for good & challenging opportunity.

MASTER THESIS

A non-local constitutive model for dense granular flows which incorporates shear-induced dilation

- Using the Finite Element Technique to solve the 4th order non-linear differential equation to understand the rheology of granular flows.
- Implementation of Cubic B-spline basis functions in iso-parametric formulation for cylindrical couette geometry.
- Solving linear system of equation (Ax = b), having a sparse matrix operator, through Generalized Minimal Residual Method (GMRES)

EMPLOYMENT

Indian Institute of Technology, Kanpur
Project Associate June'15-May'16

- Developed a self-propelled, intelligent pipe crawling robot which can monitor gas pipeline's health and detect the anomalies with an integrated onboard sensor system to avoid hazardous accidents.
- Led an experimental investigation to understand the coupling between heat load & material strength of flexible heat pipe and verified the results through finite element simulations in SOLIDWORKS.
- Performed 3D simulations in ANSYS (Fluent) to validate the new mathematical model for the pressure control system of the Light Combat Aircraft (LCA), under the steady state conditions.

Jawaharlal Nehru Centre for Advanced Scientific Research, Bengaluru
R&D Assistant May'16-May'18

- Designed & developed the self-propelled body to traverse vertically in stratified medium under stokes regime, to study the churning effect by zooplanktons in the ocean.
- Experimentally investigated the sedimentation of axis symmetry anisotropic particle in Non-Newtonian fluid under stokes regime via image processing (MATLAB).

INTERNSHIP

Ordnance Factory Khamaria (OFK), Jabalpur
Vocational Training May'13
Aim: Optimization of production cost of 40 mm L-70 cartridge case

- Devised an alternative methodology for the metal drawing process to avoid repetition in the overall manufacturing process from 8 to 5 steps.
- Proposed new guidelines to reduce the cost of finishing process by using CNC machine.

Vehicle Factory, Jabalpur
IIITDMJ Internship May'13-July'13
Aim: Analysis of steering mechanism of heavy vehicle

- Used MSC Adams (View) to simulate steering mechanism of a heavy vehicle.
- Proposed a modified design by eliminating redundant linkages in the system. This allowed a reduction in forces at the joints up to three-folds.