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PATIL MILIND BABASAHEB

PhD (Pursuing) at **VTU** (Visvesvaraya Technological University. Belagavi)
M.Tech (Machine Design)
Department of Mechanical Engineering
IITG (Indian Institute of Technology Guwahati), India.

CAREER OBJECTIVE

Seeking a position in an institute where I can explore my talent and shape my career, so as to become an expertise whose success always depends on the growth of others and add value to the institute as part of a team.

EDUCATION

Degree	Board / University/Institute	Year	CPI / Percentage
Pursuing PhD (Doctor of Philosophy)	Visvesvaraya Technological University	Registered in 2024	---------
M.Sc. (Mathematics)	Yashwantrao Chavan Maharashtra Open University	2022-2024	64.3 %
M.Tech. (Machine Design)	Indian Institute of Technology Guwahati	2009-2011	8.27/10
B.E. 4th Year (Mechanical)	Shivaji University, Kolhapur	2008-2009	71.76%
B.E. 3rd Year (Mechanical)	Shivaji University, Kolhapur	2007-2008	69.13%
B.E. 2nd Year (Mechanical)	Shivaji University, Kolhapur	2006-2007	64.48%
Diploma 3rd Year (Mechanical)	Maharashtra State Board of Technical Education	2005-2006	75.23%
Diploma 2nd Year (Mechanical)	Maharashtra State Board of Technical Education	2004-2005	75.60%
Diploma 1st Year (Mechanical)	Maharashtra State Board of Technical Education	2003-2004	82.32%

ACADEMIC ACHIEVEMENTS

- Qualified in **GATE 2009** with **97.84 Percentile**, Gate score = 583.
- Qualified in **GATE 2008** with **80.60 Percentile**, Gate score = 283.
- Secured **100 out of 100** marks in Physics & Mathematics, during Diploma.
- Stood **1st** in our **Diploma** and **B. E.** batch.
- Secured **10 out of 10** grades in **MTech** final semester.
- **Published Research Article** Based on MTech Project in Dec 2013
  - **Title:** Performance Analysis of Gas Foil Bearing with Different Foil Pivot Configuration
  - **Referred:** Scopus
  - **Level:** International Publication
  - **Name of Journal:** SAGE Journals Advances in Mechanical Engineering

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WORK EXPERIENCE IN INSTITUTE

Currently working as an Assistant Professor in Walchand College of Engineering, Sangli since 2023- till date.

Worked as an Assistant Professor in Automobile Department of Bachelor ofVocation (UGC Approved) & **(CET-11th & 12th Standard, Mathematics)** at Jaysingpur College, Jaysingpur.

WORK EXPERIENCE IN JOHN DEERE TECHNOLOGY CENTER INDIA (R&D)

Senior Engineer-III (Analysis & Simulation)
Structural Evaluation, Construction & Forestry (C&F) Division
Tower-14,Magarpatta city, Hadapsar, Pune-411013.

September 2011 – Till September 2022 experience in CAE with linear and nonlinear static & dynamic simulations and frequency analysis using Abaqus and Hypermesh.

JOB ROLE – KEY RESPONSIBILITY:

- Finite Element Model building of full vehicle and sub assembly level.
- To perform the different durability analysis using various FE tools.
- Durability analysis for major structures of excavation machine for major field load cases and frequency analysis for sheet metal and other sub-assemblies.
- Simulate Lab/Field conditions at system & sub-system level.
- Study the field failure problems that comes from the testing and field and do the FEA simulation to correlate zones
- Correlate stress test data with FEA results and calculate fatigue life of component using nCode and nSoft softwares
- Coordinating with Design and Validation Teams for counter measures and development of Cost Effective Solutions.
- To propose optimum design, create design guidelines, write analysis procedures, prepare analysis report of components by using optimization tools.

ORGANIZATION–ACHIEVEMENTS:

- **PAT ON THE BACK**–Analysis plan preparation for non-major structural components of excavation machine & Consistency in attending design staff meeting and providing valuable updates to Finite Element Analyst team.
- **WOW Awards**–
  - E140 PDP Program
  - PDP projects for ADT Machine
  - Preparing PDK Document for ADT Machine
- **Certificate of Participation**–Tractor Overhauling and Troubleshooting (TOT) program.
- **Invention Disclosure submission (2 Patents filed)**
  - **Design Change in Swing Base Plate (Excavator Machine):** Submitted as Defensive Publication
  - **Tailgate Retention using Steel Strap (Articulated Dump Truck Machine)**

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PROJECT EXECUTED IN JOHN DEERE TECHNOLOGY CENTRE INDIA

Project 1: Strain reduction of Boom, Arm & Bucket structure of Excavation machine
Details: The project involves providing cost effective solutions for the overstressed locations which were identified after stress test. Nonlinear static analysis was carried out for major load cases. N-Code was used for fatigue life calculations.
Tools used: Hypermesh, Abaqus and N-Code

Project 2: Weight reduction and strain reduction of Upper and Lower Frame structure of Excavation machine
Details: The project involves providing a weight reduced design using the stress test data and current design FEA results. Nonlinear static analysis was carried out for major load cases and was checked for yield strength and fatigue. N-Code was used for fatigue life calculations.
Tools used: Hypermesh, Abaqus and N-Code

Project 3: Evaluation of roll-over protective structure (ROPS) of Excavation machine
Details: The project involves the nonlinear static analysis of upper frame and cab of Excavation machine. Evaluated the machine cab under ROPS conditions (as per "Roll-over protective structure (ROPS) for excavators of over 6T" - ISO 12117-2).
Tools used: Hypermesh, Abaqus.

Project 4: Strain reduction of falling object protective structure (FOPS) of Excavation machine
Details: The project involves the nonlinear dynamic analysis of top guard of Excavation machine using the stress test data. The protective properties of the top guard shall be estimated by the ability of the cab or protective structure to resist impact. The DLV (see ISO 3164) shall not be penetrated by any part of the protective structure under the first or subsequent impacts of the test object at the energy levels 11 600 J (10.110 m/s):
Tools used: Hypermesh, Abaqus Explicit and N-Code

Project 5: Strength Analysis and Normal Modes Analysis of different non-major structures of Excavation & Articulated Dump Truck machines. For instance: DFCH Bracket, Air Cleaner Bracket, Muffler Bracket, Oil Filter Bracket, Joystick Bracket, Fuel Tank and Hydraulic Tank etc.
Details: The project involves finding the first natural mode of structure which should be more than the road excitation frequency in order to avoid the resonance. Durability (nonlinear static) analysis was also carried out for discrete and continuous operations. Load cases was developed using the ADV (Accelerated Design Verification) test data for the machine. N- Code was used for fatigue life calculations for both discrete and continuous operations.
Tools used: Hypermesh, Abaqus and N-Code

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WORKED IN JOHN DEERE DUBUQUE WORKS, UNITED STATES

JOB ROLE – KEY RESPONSIBILITY:

- Simulate Lab/Field conditions at system & sub-system level.
- Study the field failure problems that comes from the testing and field and do the FEA simulation to correlate zones
- Correlate stress test data with FEA results and calculate fatigue life of component using nCode and nSoft softwares
- Coordinating with Design and Validation Teams for counter measures and development of Cost Effective Solutions.
- To propose optimum design, create design guidelines, write analysis procedures, prepare analysis report of components by using optimization tools.

M. TECH PROJECT

PERFORMANCE ANALYSIS OF GAS FOIL JOURNAL BEARING

Objective: To Study the Steady State and Dynamic Characteristics of a Gas Foil Bearing.

Description:

- In first phase, the Reynolds equation of fluid motion has been solved numerically by using **Finite Difference Method** in order to find out the pressure distribution within the bearing sleeve. The resulting non-linear algebraic equation has been solved by using **Newton-Raphson Method**. For numerical integration, **Simpson's one-third rule** has been adopted to find out the load carrying capacity of particular Gas Foil Bearing.
- During the second phase, an attempt has been made to carry out the above analysis by using **Finite Element Method**, which will improve the accuracy of results and enabling relatively simple solution for finding out the stiffness and damping coefficients of the Bump-type Gas Foil Bearing. **Finite Element Model** has been developed to calculate the deflection of the top foil of Gas Foil Bearing.

Applications:

- Air cycle machine used for Airbus
- Turbo pump used in a cryogenic field
- Missile engine
- Gas turbine engine
- Auxiliary power units used in aerospace and ground vehicles

Software used: MATLAB.

M. TECH TERM PROJECT

STABILITY ANALYSIS OF TURBINE GENERATOR ROTOR SYSTEM

The stability analysis of turbine generator rotor system has been carried out. In this analysis, **Finite Element Formulation** of rotor system has been made. In order to find out the natural frequencies and mode shapes of the rotor system, **MATLAB code** has been developed on the basis of **Finite Element Formulation.**

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RESEARCH ARTICLE BASED ON MTECH PROJECT

TITLE OF RESEARCH ARTICLE / PAPER(S)	NAME OF JOURNAL (WITH CITY/ COUNTRY)	WHETHER SOLE AUTHOR/ CO AUTHOR	MONTH & YEAR OF PUBLICATION , VOLUME, NO. & PAGE NOS.	WHETHER REFEREED/ NONREFEREED	ISBN/ ISSN NO.	LEVEL (INT./ NAT./ STATE/ LOCAL)	IMPACT FACTOR
Performance Analysis of Gas Foil Bearing with Different Foil Pivot Configuration	SAGE Journals Advances in Mechanical Engineering	First Author	Dec-2013 page:1-9	Refereed (Scopus)	1687-8140	Int.	1-161 (2019)

B.E. PROJECT

MICROPROCESSOR BASED COOLING SYSTEM

An attempt has been made to study the load variation using water cooling system instead of fan on performance of Microprocessor used in CPU. In this analysis, a conclusion has been made that the water cooling system gives better performance by overcoming the speed reduction of CPU encountered when the number of operations are performed at a time as the maximum amount of heat, generated by microprocessor, is taken away by cooling water as compare to the fan cooling system.

DIPLOMA PROJECT

FERTILIZER FEED MACHINE

A mechanism was developed which could facilitate the fertilizer directly to reach at the root of the crops so as to minimize the wastage of fertilizer.

Application: The system was made from scratch from my own idea right from conceptualization, design, manufacture and final assembly and was put into practical use by farmers of my village.

AREAS OF INTEREST

- Finite Element Method
- Strength of Material
- Vibration

COMPUTER SKILL

Programming Language: MATLAB
Pre & Post processors: Hypermesh, Hyperview and Abaqus viewer
Analysis Solvers: Abaqus.

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NAME AND CONTACT DETAILS OF REFEREES

Name and contact detailsof two referees Name	Profession/Position	Institutional Affiliation	Address and Contact
Prof. S. U. Sapkal	HoD	Walchand College of Engineering, Sangli	9423091565
Prof. Sashindra K. Kakoty	Professor	IITG at Guwahati	9957198678
Prof. Karuna Kalita	Professor	IITG at Guwahati	9678069507
Dr. Amit Deshpande	Senior Tech Lead Engineer	John Deere, Pune	9922952026
Mr. Nakul Joglekar	HOD	John Deere, Pune	9764443321

PERSONAL DETAILS

Father's Name	:	Patil Babasaheb Appasaheb
Mother's Name	:	Patil Snehlata Babasaheb
Gender	:	Male
Marital Status	:	Married
Nationality	:	Indian
Permanent Address	:	216,A.B. Patil Complex, Near RBL Bank, 9th Lane, City- Jaysingpur, Dist-Kolhapur Tal-Shirol, State-Maharashtra, Pin code- 416101. Ph. No. +91-9404257221 / (9421287081)

DECLARATION

I hereby declare that the above written particulars are true to the best of my knowledge and belief.

Date: 13/06/2025

Place: **Kolhapur** **Patil Milind Babasaheb**