

## **SANGRAM SHIVAJIRAO BHOSALE**

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Founder member of Urownteacher ([www.urownteacher.com](http://www.urownteacher.com)) a consultancy firm for mechanical designing/training and co-founder of Vector Academy, Satara ([www.vector-academy.org](http://www.vector-academy.org)). Owner of Earth-Care Enterprise, a plastic recycling shredder manufacturing firm.

### **INDUSTRIAL WORK EXPERIENCE**

#### **Engineering Analyst (Aug. 2014 - Sept. 16)**

Worked as a Engineering Analyst (Aug. 2014 - Sept. 16) at Oceaneering International Services Ltd, Chandigarh, India; An oil field provider of engineered services and products, primarily to the offshore oil and gas industry.

### **TEACHING EXPERIENCE**

#### **Assistant Professor (Sept 16- May 17)**

Worked as a Assistant Professor in Dnyanshree Institute of Engineering Technology, Satara, (Sept. 16- May 17). Subjects taught: Finite Element Analysis, Theory of Machine, Noise & Vibration, Industrial Product Design. Also organized MATLAB workshop, Robotics workshop, Communication skill sessions for BE Mechanical Students

#### **Online Training/Teaching (May 17 onwards)**

Worked as online teacher for following subjects,

- Economical Engineering and Project Planning: BMC Batch Chanakya Mandal (Lectures available on Youtube)
- Basics of MATLAB and practical applications- DIET, Satara
- Finite element Simulations (ANSYS/ABAQUS)

Individual or group online sessions are conducted for following subjects:

- Calculus (MAT291H1F)- Department of Mathematics, University of Toronto
- Advance Engineering Mathematics (MAT290H1F)- Department of Mathematics, University of Toronto
- Advance Fluid Dynamics- University of Sydney
- Basic Mechanical Engineering- University of Queensland
- Engineering Economics- Kuwait University
- Additive Manufacturing- University of Leeds
- Advance Dynamics- London University
- Project Planning and Management- UAEU
- Finite Element Analysis- RWTHAACHEN University, Germany
- Practical Introduction to FEM Software- RWTHAACHEN University, Germany
- Vector Mechanics- Columbia university, NY
- Advance Dynamics- Columbia university, NY

## **ACADEMIC PROJECTS**

- **Product Design I: Coconut Picking Robotic arm (Prototype) (Aug. 2012 – Dec. 2012) :**  
Designed robotic arm to avoid the problem of unavailability of labors and to minimize the risk included in this job of picking the coconut from 30-60 feet high tree.
- **Product Design II: Feasibility of DRUSHTI (Aug. 2012 – Dec. 2012) :**  
DRUSHTI is the stick with audible GPS and sensors for visually impaired people. Prepared feasibility report with Prefeasibility, Marketing, Technical & Financial analysis.
- **M.Tech Thesis: Design, Analysis And Development of Groundnut Harvester (Sept. 2013- Aug. 2014)**  
Based on the field survey and considering needs of small scale Indian farmers Groundnut Harvester is modeled in Catia V5. Finite element analysis as well as Convergence study is carried out to ensure strength of the rotor in ABAQUS.
- **Advance FEM : Analysis of Bicycle Frame using MATLAB(Aug. 2013 – Dec. 2013)**  
Bicycle frame is analyzed for nonlinear static and dynamic case. Analysis code has been verified by ABAQUS results.

## INDUSTRIAL PROJECTS

- ◆ **Design & Development Self-propelled Onion Harvester**

Guided Project “Design & Development Self-propelled Onion Harvester” which was recognized as Second Runner-up in National Level Competition (TIFAN) organized by SAE.

- ◆ **Development of Unmanned Aerial Vehicle for spray painting and agricultural pesticide spraying**

Designed, analyzed and developed a hexacopter which can spray pesticides as well as which can be used in spray painting high altitude buildings.

- ◆ **Design and development of Modern Cleaning cart**

Design, optimization of modern cleaning cart is carried out for Dubai Municipal Corporation. Existing weight and design optimized as well as few additions such as cooling chamber, fan is added to ease life of the handling labor.

- ◆ **Bend Limiter analysis for Apache-Julimar Corporation and British Petroleum**

Finite Element Analysis of bend limiter is carried out in ANSYS Workbench and modified the component to minimize higher order stresses as per API 17L2.

- ◆ **Armor pot analysis for Oceaneering SDS-Niterói and Shell**

Non-linear structural analysis is performed to check the structural integrity of the armor pot under maximum umbilical operational load. Limiting tri-axial strain calculations done as per ASME BVPC Section VIII Division 2 and ISO 13628-7:2005.

- ◆ **Umbilical Distribution System Lifting Analysis For Oceaneering SDS- Houston**

UDS is analyzed in Ansys APDL for lifting case as per DNV 2.7-3. Pad-eye design and calculations are done as per DNV 2.7-3

- ◆ **Kizomba Mondo Topside Hardware Fatigue Analysis**

Fatigue analysis of the topside hardware is carried out as per BS 7608 and DNV RP C203. Topside hardware is analyzed in Ansys Workbench for static case.

- ◆ **Umbilical Distribution System Lifting Analysis For Oceaneering Umbilical Solutions**

UDS is analyzed in Ansys APDL for lifting case as per DNV 2.7-3

- ◆ **Drop Object Test on Armor Termination for BP (British Petroleum) Shah Deniz 2**

Explicit dynamic analysis of armor termination is carried out in LS-Dyna.

## **TECHNICAL SKILLS**

### **Packages:**

- **Analysis** : ANSYS Workbench, LS-Dyna, ABAQUS, Pro-Cast, ADAMS
- **Modeling** : Catia V5, Hypermesh, CREO, SolidWorks, AutoCad
- **Other** : MathCAD, MS Office

**Languages:** MATLAB, APDL, Basic knowledge of C, C++

### **Project Consultant / Trainer for:**

- Finite element analysis tools (ANSYS, ABAQUS, Hypermesh, CREO) with hands-on projects
- 3D modeling tools (CATIA, SOLIDWORKS, AUTOCAD)
- Introduction to MATLAB (Optimization codes, Looping system)
- Product design, analysis and development rules
- Implicit/explicit Analysis methods and applications (LS-dyna, ADAMS)