

VIJAY SAINI

Assistant Professor,
Department of Mechanical Engineering, September 2013 to Present
Women's Institute of Technology
Constituent college of Uttarakhand Technical University, Dehradun, India.
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Field of Interest: CAD/CAM, Product Development, Virtual Reality, Welding Technology.

Education

M.TECH. Mechanical Engineering (Manufacturing Systems Engineering) 1st Class , 2006

SLIET (Deemed University of Central Government of India, formerly affiliated to Punjab Technical University, India)

Thesis topic: *Manufacturing Feature Extraction from Cad database, Using Artificial Neural Networks*

B.E. Mechanical (Specialization in Welding Tech.) 1ST Class , 2003

SLIET (Deemed University of Central Government of India, formerly affiliated to Punjab Technical University, India)

Diploma Mechanical (Specialization in Welding Tech.) 1ST Class , 2000

SLIET

Highlights of Employment

Total Experience= 10+ Yrs

Assistant Professor , Deptt. of Mechanical Engg **Sept. 2012 to present**
(WIT,Constitute college of Uttarakhand Technical University)

- Taking different subjects for UG mechanical Engineering such as Material Science, Measurement Metrology & Control, CAD/CAM, Advance Welding Technology and Manufacturing Science etc.
- Training for, mechanical CAD/CAM software like AutoCAD, Solidworks
- Establishment of new labs

Assistant Professor & Head, Deptt. of Mechanical Engg. **May 2009 to August 2012**
(Quantum School of Technology, Roorkee)

- Responsibility regarding Head of Mechanical Deptt.
- Taking different subjects for 2nd , 3rd & 4th year mechanical classes such as Advance Welding Process,Material Science, Measurement Metrology & Control, Machine Design & CAD/CAM etc.
- Training for, mechanical CAD/CAM software like AutoCAD, Solidworks
- Other research oriented activities like Guiding Projects on Robotics, non renewable energy etc.
- Establishment of new labs
- Member of recruitment team, examination committee.

Product engineer at I.D.E.A. **Nov, 2006 to March 2009**
(Innovative Design Engineering Animation Pvt. Ltd., Ahemdabad).

- Designed, modeled and engineering for more than 30 projects in different categories such as house hold appliances, mechanical components, electronics housing etc, for US market.
- Projects done for companies like **Shell (US), Iridex (US), and TATA BP Solar etc.**
- Provide technical inputs to industrial designers regarding mechanisms, manufacturability and costing etc.
- Created assembly drawings, including bill of materials and detail drawings, costing, for machining, assembly and welding.

Detail of some of the projects.

1. SOLAR POWER LIGHT WITH ROTABLE HOARDINGS- A TATA BP SOLAR COMPANY PROJECT.

- **Project Scope:** To design a solar powered light based advertisement hoarding, having facility of rotating the hoarding from horizontal to vertical position when desired, to enclosed all battery and circuit in aesthetic box.
 - **Key role:** Manufacturing inputs to industrial design, modeling the whole project in Solidworks, finding and suggesting cost effective manufacture able process and designing according to that. Static analysis, costing and drawings.
2. **SOLAR COOKER WITH ROTI MAKER ATTACHMENT AND MOBILE CELL CHARGING UNIT- A CLIMATE HEALEAR NGO PROJECT (USA NGO)**
 - **Project Scope:** To design a Solar cooker of 650watts, having energy enough to bake a roti, also having solar panel to charge a mobile and 50 lumen lamp.
 - **Key role:** research and study about existing solar cooker, calculation, design a new solar cooker to get 650watts power, calculation to identify required solar panel. Vendor development. ongoing project
 3. **SUNSHADE FOR CAR DASHBOARD- A SHELL COMPANY PROJECT (USA) project.**
 - **Project Scope:** Highly challenging project, To design new, innovative Sunshade for cars dashboard, which is single button operated, user friendly, less than 8\$, and have operation time of 6 sec.
 - **Key role:** Giving inputs in concept finalization, preparing concept working model to show as proof of concept to client, selecting the standard parts, reverse engineered them to accommodate with our custom part and housing, designing the whole casing so it can be machined.
 4. **MEDICAL LASER MACHINE ADAPTER- A IRRIDEX COMPANY PROJECT (U.S. COMPANY)**
 - **Project Scope:** To modified existing adapter, so that it can accommodate different diameter fiber optic cable, so the adapter can be used in new machine.
 - **Key role:** Research of existing adopter functionality, tensile testing after prototype making, different solution for the problem, search for standard parts. Modeling in Solidworks
 5. **PORTABLE PRINTER WITH LAPTOP COOLER- US PATENT PROJECT**
 - **Project Scope:** To design housing for existing standard smallest printer, which can also serve as base to laptop, also having cooling feature for laptop.
 - **Key role:** A sort of reverse engineering the smallest printer available, so it can be fitted in housing, developing and designing new type of paper feed mechanism, developing and designing laptop lifting mechanism, selection of materials, costing and drawing.
 6. **Detachable handle socket ratchet wrench system-US patent project**
 7. **Beach cooler system - US patent project**
 8. **Disposable mobile phone- US patent project**
 9. **Cookware cleaning device- US patent project**
 10. **Toe cleaner device- US patent project**
 11. **Silent morning alarm - US patent project**
 12. **Toilet dispenser- US patent project**
 13. **Combined fishing rod holder and caddy- US patent project**
 14. **Management apparatus- US patent project**

For more details please visit www.vjs.carbonmade.com, www.sainivijay.carbonmade.com

**Research Fellow 'A', A.H.E.C.
(Alternate Hydro Energy Centre), India Institute of Technology, Roorkee**

2004 to Oct, 2006

- Worked on more than 10 projects in different parts of India **specially in the field of applications of solar energy technology, Village Electrification with solar and hydro power generation.** Worked as mechanical engineer, check and modify the drawings of turbine, pumps and other accessories using advance modeling tools. Major clients are Alstom Projects India Ltd, VA-Tech., Bhel, Geetapumps, Tractebel, HPP Energy, ABB Ltd., Kirloskar Bros., The Triveni Engg. Etc.

- To assist senior consultants in preparation of detail project reports, feasibility reports for renovation, modernization and erection of Solar power plant and small hydropower plant. To visit sites and find out feasibility conditions for the power plant. Major clients are government organizations such as Uttaranchal Renewable Energy Development Agency, Punjab Energy Development Agency, Bihar State Hydroelectric Power Corporation Ltd., Bihar Renewable Energy Development Agency etc.

Core competences

- Mechanical software :-
 - Solidworks 2008 (Certified Solidworks Associate)
 - Catia V5
 - Ansys 7 (Structural Analysis)
 - Autocad 2004
 - Master cam
- Basic GD&T and stack up analysis.
- Plastic part designing.
- Languages:-
 - C, C++
- Operating systems
 - Windows 98,2000,XP, Vista

Award Received

1. First prize on the spot working job making - **National Level Event.**
2. Third prize working model- **National Level Event.**

Conference Attended

1. One day short term course at IIT Roorkee, titled “Failure Analysis and life assessment”, 14th March 2015.
2. International Conference on Advancements in Engineering & Technology, Bhai Gurdas Institute of Engineering & Technology (BGIET), Sangrur, Punjab, India. 12-13, October 2012
3. International conference on Advancement and Future Trends in Mechanical and Material Engineering, Punjab Technical University, Punjab, India., 5-7 October 2012
4. National Conference of Contemporary Trends in Managements: Opportunities and Challenges, Quantum School of Business, Roorkee, March 24-25, 2012
5. National Conference on Advances in Manufacturing Technology, National Institute of Technical Teachers Training and Research, Chandigarh, March 15-16, 2012
6. National Seminar on Emerging Trends in Manufacturing Systems, Sant Longowal Institute of Engineering & Technology, Sangrur, January 18-19, 2004.
7. National Workshop on Welding Technology in India: Present Status and Future Trends, Sant Longowal Institute of Engineering & Technology, Sangrur, April 25-26, 2003.

Books Authored

1. Saini Vijay (2013), Book on “Feature Extraction from CAD using artificial neural network”. LAP Lambert Academic Publication, Germany. **ISBN: 978-3-659-41219-6**
2. Saini Vijay (2014), Book on “ Friction Welding- A Review” LAP Lambert Academic Publication, Germany. **ISBN: 978-3-659-53665-6**

International Publications

3. Vijay Saini, Manjeet Singh. “Genetic Algorithms approach in optimization of GMAW parameters”, International journal of research in mechanical engineering and technology, May-Oct 2013 **ISSN-22495762**.
4. Vijay Saini, Shivali Singla. “ Parameter optimization of SAW in Hardfacing Process using hybrid approach of Adaptive stimulated Annealing”, Asian journal of engineering and applied technology, July-December 2012 Volume 1 No. 2, **ISSN-2249-068X**
5. Vijay Saini, Shivali Singla, “ Combination of adaptive simulated annealing and artificial intelligent approach in optimization of GMAW” ,Proceedings of International conference on Advancement in engineering and Technology, Sangrur (PB),Oct 12-13, 2012
6. Ankur Sharma, Vijay Saini, “Applying Neural Network Approach in Fundamental Analysis of FMCG Sector”, International Journal of FMS Udaipur “*Prabandh*. **ISSN- 0984-8229**” May 2012.

National Publications

7. Shivali Singla, Vijay Saini, “Artificial Neural Network Approach To Prediction Weld Fatigue Life & Penetration In Metal Inert Gas Welding”, 7th National Conference On Innovative Developments In Engineering Applications, Bhai Gurdas Institute of Engg. & Tech., Sangrur-148001(Punjab), 15-16 April 2012.
8. Vijay Saini & Ankur Sharma, “Forecasting of Stock Market using Machine intelligence – An Artificial Neural Network Approach” National Conference of Contemporary Trends in Managements: Opportunities and Challenges, Quantum School of Business, Roorkee, March 24-25, 2012.
9. Vijay Saini, Shivali Singla , Ankur Sharma & Harshwardhan Sharma,” Artificial intelligence approach for prediction of weld hardness in metal inert gas (MIG) welding”, Proceedings of National Conference on Advances in Manufacturing Technology, National Institute of Technical Teachers Training and Research, Chandigarh, Page No. 20-24, March 15-16, 2012.
10. Vijay Saini, Shivali Singla & Dr. P.K. Singh,” Feature Extraction from CAD database, Using Artificial Neural Network”, National conference on Advancements in Mechanical Engineering and Energy Environment, Sant Longowal Institute of Engineering & Technology, Sangrur, 6-7 January, 2012

11. Vijay Saini, Sandeep Choudhary, " Thermal Spraying- A Review", National Seminar on Emerging Trends in Manufacturing Systems, Sant Longowal Institute of Engineering & Technology, Sangrur, January 18-19, 2004.
12. Vijay Saini, " Virtual Manufacturing", National Seminar on Emerging Trends in Manufacturing Systems, Sant Longowal Institute of Engineering & Technology, Sangrur, January 18-19, 2004
13. Vijay Saini, "Aluminum Welding- A Review", National Workshop on Welding Technology in India: Present Status and Future Trends, Sant Longowal Institute of Engineering & Technology, Sangrur, April 25-26,2003.
14. Vijay Saini, Purshottam Bhattacharya, "Hybrid Laser Arc Welding", National Workshop on Welding Technology in India: Present Status and Future Trends, Sant Longowal Institute of Engineering & Technology, Sangrur, April 25-26,2003.

Workshops Organized

1. **Convener of International Workshop** titled " International Workshop on Social Robotics, Automation and Mechatronics" 1-2 May 2015,at Dehradun, Supported by IEEE and ACM

Extra Curricular Activities

1. **RAPOTIER** -Paper Presentation in Computer Engg. Category, National conference, 2004
2. **RAPOTIER** -Paper Presentation Mechanical Engg. Category, National conference , 2004
3. **SECRETARY** – Model Making Committee, National Level Event (2002)
4. **MEMBER** – Mechanical Committee, National Level Event (2001).
5. **MEMBER** – Mechanical Committee, National Level Event (2000).
6. **PARTICIPANT SOFTWARE MODEL**, National Level Event (2000).
7. **PARTICIPANT NON-WORKING MODEL**, National Level Event (2000).
8. **PARTICIPANT WORKING MODEL**, National Level Event (1999).

Hobbies/Extra Activities

- Making electronics circuits & Gadgets.
- Observing consumer behavior
- Making websites.
- Surfing internet.
- Listing Music

Personal Details

Full Name:- VIJAY SAINI
 Marital status:- Married
 Date of Birth:- 8-Jan-1979
 Nationality:- Indian
 Home Address:- H-No. 616,New Adarsh Nagar,Roorkee,Dist-Haridwar,Uttarakhand.

(VIJAY SAINI)