

# ANUJ A. DESHPANDE

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## EDUCATION

- Binghamton University, State University of New York at Binghamton** **Jan 2018 – May 2020**  
Master of Science in Industrial and Systems Engineering (GPA 3.37/4.00) Thesis Based [Fully Funded USD \$36,000]  
**Coursework:** Applied Probability & Statistics, Operational Research, Advance Supply Chain Management, Modeling & Simulation, Additive Manufacturing & Systems, Materials for Manufacturing, Enterprise Engineering, Electronics Packaging
- Jain College of Engineering, affiliated to Visvesvaraya Technological University, Belagavi, India** **June 2013 – June 2017**  
Bachelor of Engineering in Mechanical Engineering (Aggregate 67.00%)  
**Elective subjects:** Total Quality Management, Product Life Cycle Management, Rapid Prototyping, Computer Integrated Manufacturing

## TECHNICAL SKILLS & APPLICATIONS

**Industrial Tools:** Kaizen, 8D, 5S, Root cause Analysis, Kanban, Poka-Yoke, APQP, PPAP, MSA, SPC, FMEA, PDCA, QC tools, SIPOC, DMAIC, JIT, Value stream mapping, PERT/CPM, Forecasting, Queuing theory, Project Management, Inventory control

**Industrial Skills:** ISO 9001:2015, Minitab, Excel, Microsoft Project, Visio, Fusion 360, Solid EDGE, CATIA V5, Python, SIMIO, ANSYS, Office, Outlook, Meshmixer

## CERTIFICATION & ACHIEVEMENTS

- Lean Six Sigma Green Belt Certified (LSSGB)** – Binghamton University **May 2019**
- 5 Core Tools Certified – Registered by Ministry of MSME (APQP, PPAP, MSA, SPC, FMEA)** – Quality Hub India **December 2021**
- 3D Printing Software** – University of Illinois at Urbana-Champaign **December 2021**
- Supply Chain Principles** – Georgia Institute of Technology **September 2021**
- ISO 9001:2015 Quality Management System Auditor Certified** – RIGCERT Europe **July 2019**
- Programming for everybody (Getting started with Python)**- University of Michigan **August 2020**
- Digital Manufacturing & Design | Industry** – University at Buffalo **July 2020**
- 3D Printing Software** – University of Illinois at Urbana-Champaign **June 2020**
- Data Analytics using Excel** – Binghamton University **October 2019**
- Programming with Python** – Binghamton University **September 2019**
- Probability & Statistics (DAT1801) Certified** – Binghamton University **November 2018**

## PUBLICATIONS

- Communicated paper on “**Process Optimization for Manufacturing 3-Dimensional Printed Dentures**” in Scopus Index **Ongoing**
- Anuj Deshpande, Jia Deng, “**Dimensional Accuracy Evaluation of 3D Printed Teeth Model for Orthodontics**” ProQuest Dissertation Publication, **January 2021**
- Anuj Deshpande, Akhil Deshpande, Vinayak Kulkarni, “**Web-based Remote Controlling and Condition Monitoring of the Heavy Machineries**”, International Journal of Computer Internet and Management (IJCIM) Vol: 25 No: 2 PG: 21-25, ISSN NO: 0858 – 7027. Impact Factor: 5.36 (Index Copernicus Value 2013)
- Anuj Deshpande, “**e-Learning As a Tool in Bridging The Gap Between Engineering & Spiritual Learning**” International Journal of Computer Internet and Management (IJCIM) Vol: 24 No: SP2 PG: ISSN NO: 0858 – 7027 · Mar 10, 2017
- Anuj Deshpande “**Using M-Learning as a Tool in Improving the Teaching Learning Process under Outcome Based Education System**” Using M-Learning as a Tool in Improving the Teaching Learning Process under Outcome Based Education System’ in International Journal of Computer Internet and Management (IJCIM)
- Anuj Deshpande, Akhil Deshpande, Vinayak Kulkarni, “**Internet-based control and operation of Computer Numeric Control Machines,**” International Journal of Computer Internet and Management (IJCIM), Vol 23, No: SP2, Dec 2015, pp 15.1-15.6, ISSN: 0858-7027. Impact Factor: 5.36 (Index Copernicus Value 2013)
- Anuj Deshpande, Akhil Deshpande, Swati Joshi, “**Cloud-Based Learning for Enhancing Teaching-Learning Process in Technical Education**”, International Journal of Computer Internet and Management (IJCIM) Vol: 23 No: SP 2, ISSN NO: 0858 – 7027. Impact Factor: 5.36 (Index Copernicus Value 2013)

## RESEARCH EXPERIENCE

**Master Thesis: DIMENSIONAL ACCURACY EVALUATION OF 3D PRINTED TEETH MODEL FOR ORTHODONTIC**

**Determined Variation of 3D printed objects at Innovation Technology Complex, Binghamton**

**July 2019 – May 2020**

- Analyzed 3D printed teeth model using Software – Cloud Compare
- Cleaned and post-processed STL file using Meshmixer as per medical standards
- Scanned and printed 3D printed dentures using Form3, SLA technology
- Analyzed data and performed Correlation analysis, paired t-test & 2- sample Hypothesis test using Minitab
- Conducted DOE on 3D printed dentures for clinical purpose and then used 2- factor ANOVA for the same

**Analyzed & Determined accuracy of 3D printed Dentures at Binghamton University****January 2019 – June 2019**

- Calculated the precision & accuracy of 3D printed dentures using Dragonfly 3D software
- Visualized data using python & conducted descriptive statistics and normality check results
- Performed Gauge R & R study on measurements for SLA printed dentures
- Performed Chi-Square test of independence on the conventional milled model and SLA 3D printed model
- Conducted built time analysis for 3D printed dentures for various orientations 90°, 45°, and 0°

**PROFESSIONAL EXPERIENCE****MMEC Belagavi**, Department of Robotics & Artificial Intelligence – Assistant Professor**January 2022 – Present****JSW Steel Limited, Industrial Intern, Bellary, India****January 2016 – February 2016**

- Examined Process Optimization of Steel Rods using Time & Motion study, Root Cause Analysis & PDCA, PDSA
- Part of an Advanced product planning team and responsible for prototype product launch, Initial process studies, capabilities studies using tools such as SPC, and a few among 7 old quality tools
- Exposure to Poka-Yoke, Andon, Gemba
- Examined overall process flow in heat treatment of raw materials using process mapping to better understand KPI's
- Performed a monitoring function of the flow of material in the plant, managing inventory level for raw material

**HLL Lifecare Limited (A Government of India Enterprise), Engineering Intern, Kanagala, India****July 2015 – August 2015**

- Performed high-level safety testing of Condoms in the R&D testing department
- Determined various wastes produced during the process of manufacturing condoms and produced an idea to minimize the same using basic knowledge of lean techniques
- Performed GEMBA to increase communication with the operators and connecting R&D testing lab with the operators directly

**PROJECTS****Designed and produced 3D printed Ventilators at United Health Services, New York****April 2020 – May 2020**

- Designed medical ventilators with Poka-Yoke for the patients during the peak of COVID-19 in New York, using Fusion 360 and produced 3D prints using Form 3, SLA printing technology

**Agent-Based Modeling with Netlogo Simulation (COVID -19)****May 2020 – June 2020**

- Created a model that simulates the spread of a hypothetical virus through close contact between agents in a world using the ABM technique
- Programmed & Determined track and history and “Number of infected” of the virus contaminators by defining color

**An Integrated Public Shared Commercial Warehousing System for Enterprise Users****July 2018 –December 2018**

- Designed Public warehouse to reduce transportation costs and other costs incurred using advance EXCEL
- Generated optimized schedule using mixed-integer linear programming (MILP)
- Achieved better utilization rate using public warehouse sharing technique
- Determined key performance index with the use of obtained optimized results
- Created Decision Support System using Python & expanded the Company's efficiency by designing a working model for warehouse

**Queuing model of Dining Services in Binghamton University****July 2018–December 2018**

- Designed a queuing model & reduced Queue time and improved efficiency in the system with the help of SIMIO simulation
- Performed M/G/8 – Multi-server processes on the arrival of students at Binghamton University dining hall
- Increased capacity of the dining hall to counter high demand without significant capital investment using Value Stream Mapping (VSM) eliminated non-value-adding steps

**Improved working systems at Binghamton Dining Services using Lean Manufacturing Techniques****January 2018 – May 2018**

- Produced a baseline for material handling using PDCA wheel & measured impacts on working using continuous improvement strategies
- Reduced Work in Process (WIP) by improving & designing a new workforce and tracking inventory level

**Designed and produced “Low-Cost Tubeless Solar Water Heater”****January 2017 – June 2017**

- Designed Solar panel to achieve high radiation absorption, using CATIA v5
- Used corrugated Tin Sheets to reduce the price and weight of the solar panel
- This design replaces the Conventional tube technology with sheet technology
- Achieved enhanced thermodynamic results compared to the existing commercial solar water heater

**WORKSHOPS ATTENDED****Additive Manufacturing for bioimplant manufacturing and challenges** at Arasu Engineering College, Tamil Nadu**June 2020****Welding for Additive Manufacturing** at Indian Welding Society, India**June 2020****Role of Additive Manufacturing (3D Printing)** at Birla Vishvakarma Mahavidyalaya, Rajasthan**June 2020****Industry 4.0 – Manufacturing Execution Systems & Supply Chain Management** at AISSMS, Pune, Maharashtra**May 2020****3D printing ‘Stacking Layers 2K17** in Association with ATTIS Systems, Hong Kong**March 2017****Advance Automotive Engineering** at Automotive Research Association of India (ARAI), Pune**February 2017**