Swagatika Mohanty

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LinkedIn

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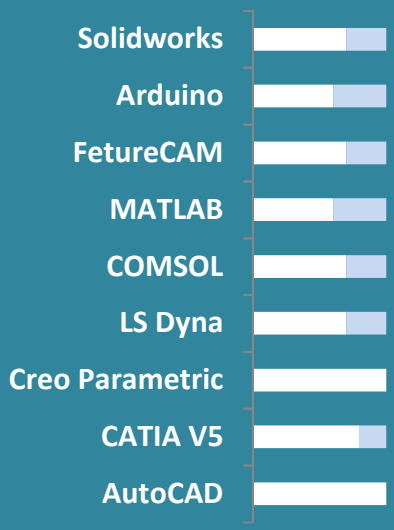
Skills



Profile

A highly skilled and dedicated process engineer with Asia Motor Works having 1.6 years of experience in the automobile industry and 3 years of experience in Vellore Institute of Technology. I am seeking a challenging position to apply my expertise in advance manufacturing technology.

Employment History

Process engineer (Manufacturing Engineering) -AsiaMotor works – Bhuj

July-2011-Jan 2013

- Preparation of control plan, Failure mode and effect analysis (FMEA), and standar operating procedure (SOP) for chassis inversion to engine gearbox assembly.
- Defect resolution and control at different inspection stages in the vehicle assembly line (per thousand trucks).
- Designing and validating various fixtures for inspecting new product parts.
- Conducting Product Audit, Process Audit, and Torque Audit for the truck assembly line.
- Process validation and documentation for Process Improvement Note (PIN) and Engineering Change Note (ECN), implementing PPAP on the assembly line.
- BOM validation and updating for different truck models.
- Creating new part numbers through SAP and managing the process from scheduling contract to vehicle declaration.
- Validating processes and FTG (fixture, tool gauges) for new products and ECNs during the Proto phase.
- Implementation of a high-rise rack for storing different engine models in the warehouse.
- Designing and implementing an automated fixture for lifting and fitting heavy tires on hubs.

Senior assistant professor (School of mechanical engineering) Vellore institute of technology, Chennai

June 2020- July 2023

- Teaching design and manufacturing graduate and undergraduate courses.
- Managing newsletter team and team of professors handling proctee students.
- Contributed towards new syllabus formation and

syllabus revision of the University

- Research interest- Robotics, metal forming, advance manufacturing technology
- Conducted technology development program on Reliability, Availability, Maintainability and Safety (RAMS)

Research Guidance-

- Numerical simulation of warm incremental sheet metal forming under different forming condition
- Design of advanced IOT based storage system for crops in India.
- Deformation analysis of Ti-6Al-4V sheet in roboforming.

Education

Birla Institute of Technology & Science, Pilani
August 2019 ▪ Doctor of Philosophy (Robot assisted incremental sheet metal forming) – 8.46 GPA

- A novel robotic manipulator was designed to manipulate the sheet and incrementally form the sheet with better formability and surface quality.
- New tool path was designed to deform the sheet at desired location with the help of designed manipulator and vertical CNC milling machine.
- Finite element simulation using LS-Dyna was performed before manipulator fabrication to understand the effect of additional degree of freedom and newly designed tool path on material deformation in incremental forming.
- Formability, Forming force and surface quality was measured and compared experimentally with existing incremental forming process results.

C.V.Raman College of engineering, Bhubaneswar, odisha
May 2011 ▪ Bachelor of Technology in Mechanical Engineering – 8.12 CGPA

Skills
Modeling: ProE, Catia, Solidworks, AutoCAD, Autodesk ALIAS
Analysis: LS-Dyna, Comsol, RoboAnalyser
Coding: Matlab, FeatureCAM, ARDUINO
Languages: Odia, Hindi, English, Deutsch(Level-1)

Publications:

- Mohanty S, Regalla SP, Daseswara DR (2018) Investigation of influence of part inclination and rotation on surface quality in robot assisted incremental sheet metal forming (RAISF). CIRP Journal of Manufacturing Science and Technology 22:37–48 . doi: 10.1016/j.cirpj.2018.04.005.

(Elsevier)

- Mohanty, S., Regalla, S. P., & Daseswara Rao, Y. V. (2019). Robot-assisted incremental sheet metal forming under the different forming condition. Journal of the Brazilian Society of Mechanical Sciences and Engineering, 41(2), 1–12. doi:10.1007/s40430-019-1581-6 (Springer)
- Mohanty, S., Regalla, S. P., & Daseswara Rao, Y. V. (2019). Influence of process parameters on surface roughness and forming time of Al-1100 sheet in incremental sheet metal forming. Journal of Mechanical Engineering and Sciences, 13(2), 4911–4927.
- Swagatika Mohanty, Srinivasa Prakash Regalla, Y.V. Daseswara Rao, Effect of inclination and rotation of the sheet on sheet thinning and formability in robot assisted incremental sheet metal forming, Materials Today: Proceedings, 2021. ISSN 2214-7853, https://doi.org/10.1016/j.matpr.2021.01.228.
- Ray R, Shanker R, Gupta H, Sharan M, Mohanty S. Automated Quadruped Robot Simulation using Internet of Things and MATLAB. J Phys Conf Ser 2021;2115:012022. doi:10.1088/1742- 6596/2115/1/012022
- Mohanty S, Regalla SP, Daseswara DR (2017). Tool Path Planning for manufacturing of Asymmetric parts by incremental sheet metal forming by means of Robotic manipulator. Materials Today Proc., vol. 4,. doi:10.1016/j.matpr.2017.01.090. (Elsevier)
- Mohanty S., Regalla S.P., Daseswara Rao Y.V. (2018) Dynamic Analysis of Robotic Manipulator for Incremental Sheet Metal Forming. In: Dixit U., Kant R. (eds) Simulations for Design and Manufacturing. Lecture Notes on Multidisciplinary Industrial Engineering. (Springer), Singapore
- Mohanty S, Regalla SP, Rao YVD (2015) Multi-stage and robot assisted incremental sheet metal forming. Proc 2015 Conf Adv Robot - AIR '15 1–5 . doi: 10.1145/2783449.2783457 (ACM digital)
- Mohanty S, Regalla SP, Rao YVD (2016) Dynamic analysis of robotic manipulator for Incremental Sheet metal forming. 6th Int 27th All India Manuf Technol Des Res Conf (AIMTDR-2016), December 16-18, 2016 Coll Eng Pune, Maharashtra, INDIA 2–6