



Pravanjan Nayak

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Professional Industrial Robotics Engineer having experience at the industry academia research Centre in the Centre of Excellence in Advanced Manufacturing Technology, IIT Kharagpur. Being a Project Engineer, worked over wide varieties of Industrial applications such as AI/ML and Brain Computer integration to the Industrial Robots and system integration of various machineries. Always focus to develop my technical and other skills to do better for an organization. With growing technical and practical knowledge gained from my past, will contribute to maximum of my capacity and take responsibilities in upcoming years.

WORK EXPERIENCE

Projects | Solutions

IIT Kharagpur

April 2019- Present

Kharagpur

Centre of Excellence in Advanced Manufacturing Technology,
IIT Kharagpur is one of the Industry Academia research centre

Responsibilities:

- System integration of all industrial robots, Create Concept, Validate Feasibility, CAD & Robot Simulation, Writing Project Proposals, Industrial Automation, PLC programming, POC Setup Development, Application Programming, Industry 4.0 implementation strategy, Robotics and CNC Training to students and Industry professionals, Mentoring Research Interns from different colleges.
- **Recent Projects:** Integration of **AI enabled pose estimation** and **shape detection algorithm** from a low cost webcam to the Industrial Robots. Developed an interface for sending **feedback** to a robot externally for **real-time control** of robot co-ordinates and different parameters using **OPC-UA** software. Single handed Designed, Fabricated, Assembled and Integrated the Conveyor and Gripper attachment to the Industrial Robots. Implemented of the **Brain data** via **EEG cap** for the colour classification to the Industrial Robot.
- **RRC and HRC Projects:** Mentoring students to develop the **robot to robot collision avoidance** control using ROS for Industrial Robots. Developed a **zone alertness** to the Industrial robots from the human movements near to the manipulators and according to the actions takes by the robot.
- **Setup Development:** Hybrid digital twin setup for an automated hydraulic power to check and analyse the health condition. A Design space exploration POC setup development. Different fixture design for welding applications.
- **Training Programme:** Played a key role for organizing and giving lecture and Hands-on training on the Industrial Robots and programming to the participants.

IIT Kharagpur

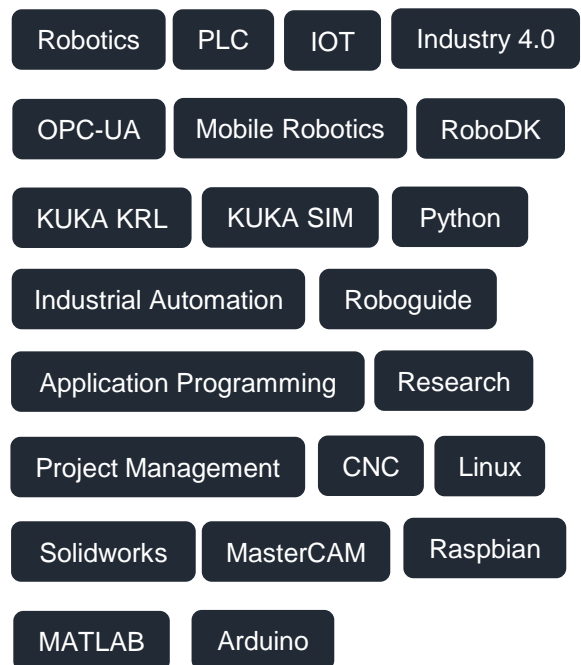
November 2017- April 2019

Department of Mechanical Engineering, Laser metal processing
Laboratory, IIT Kharagpur

Responsibilities:

- Online process monitoring and controlling of Direct Metal Laser Deposition process. Designing and fabrication of a X-Y stage for the real-time control of the DMLD process.
- **Project:** Implementation of the temperature monitoring from IR pyrometer and controlling of the axis feed as per the algorithm set through the Matlab and Arduino in the DMLD process.

SKILLS



OTHER PROJECTS

Intelligent Social Distancing Alert Device At the time of COVID-19 (April 2020)

Developed and implemented a social distancing alertness device inside the tech-market of IIT Kharagpur. This device is developed by implementing the computer vision measurement from one person to another person distance of 1 metre and alerts to make distance. Placed three no's device inside the market. This helped everyone at the rising time of COVID-19.

LANGUAGES

English

Full Professional Proficiency

Hindi

Full Professional Proficiency

Odia

Full Professional Proficiency

WORK EXPERIENCE

Galaxy Machinery PVT Ltd

December 2014- March 2016 Bangalore

- Responsibilities:
- Design cum installation of the automation products with the CNC machines according to the customer requirements.
 - **Project Implementation:** Implementation of the automatic job loading and unloading by the Fanuc Industrial Robot to the Twin spindle CNC machine (Installed in KAPL Bnagaore). Implementation of the bar feeder and parts catcher to the CNC turning centre. Interfacing of the auto tool wear offsetting to the CNC machine by the air gauge system (Indo Swiss Dodabalapur). Implementation of the newly designed pallet changer to the VMC machine (Jamna Auto Industries Hosur). Core member in the implementation and installation of the Gantry loader to the series of three CNC machines fully automated CNC machine operation (SFL Pondicherry).

Omax Autos Ltd

July 2013- November 2014 Bangalore

- Responsibilities:
- Plant and machine maintenance, attending breakdown calls and documentation in the SAP.
 - **Maintenance work:** Troubleshooting of Robotic welding cell, CNC machines, and Press Machines. Troubleshooting of the different alarms occur in the machines, Turret and ATC gear dismantling and assembling. Troubleshooting of hydraulic and pneumatic parts.

EDUCATION

Bachelor of Technology

Maharaja Institute of Technology

06/2016 - 04/2019 Bhubaneswar
Course

- Mechanical Engineering

Diploma in Engineering

Institute of Textile Technology

06/2010 - 04/2013 Choudwar
Course

- Mechatronics Engineering

High School

Kshetra Mohan Bidyapitha

05/2007 - 04/2010 Salapada
Course

- Secondary School

HOBBIES

Paying Cricket

Paying Baseball

Singing

Cooking

Repairing old products

Photography

HONORS

- Selected as a jury member in the skill of **Robot System Integration** in India Skills 2021
- Within the design cum installation team in whole over India in Galaxy Machinery Pvt Ltd, Awarded as a **"Best Young Galaxian"** in **1st position.**(2016)
- Played Baseball at National Level in Chandigarh (2010)

RESEARCH PUBLICATIONS

International Publication:

- Abhijit Sadhu, Amit Choudhary, Sagar Sarkar, Amal M. Nair, Pravanjan Nayak, PawarSagar Dadasaheb, Muvvala Gopinath, Suriya K. Pal, and Ashish Kumar Nath. "A study onthe influence of substrate pre-heating on mitigation of cracks in direct metal laserdeposition of NiCrSiBC-60% WC ceramic coating on Inconel 718." Surface and CoatingsTechnology (2020): 125646.
- Presented scientific article entitled "A study on in-situ synthesis of TiCN metal matrix composite coating on Ti-6Al-4V by laser alloying process" authored by Amal M Nair,Muvvala Gopinath, Pravanjan Nayak, Ashish Kumar Nath at National Laser Symposium27 held at Indore, India during December 3-6, 2018

PATENT

Patent filed (Ref no: 202031050404)

Low-cost real time vision-based Industry 4.0 solution powered by artificial intelligent techniques for metrological inspection