Jayant Kumar Jha

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Summary

I have learned machine learning and deep learning from massive collections of Literature's and MOOC's and to be precise still learning. Interested in creating Neural Network with application in mind for computer vision and Natural Language Processing. Advanced understanding of statistical, algebraic and other analytical techniques. Highly motivated and diligent with significant background in Mathematical Modelling.

Work Experience

Machine Learning Scientist   Dec 2019 – present
ArabEasy LLC

- Manage team & Technology *Agile Scrum* practices for development of In-house product and features. Define and develops best practices and tools for project executions and management. Creating project plans, schedules, estimates and forecasts. Resolving project issues, mitigate risks and manages change management.
- Responsible for hiring, Mentoring & training Juniors and interns, planning technology roadmap, driving agile development with focus on architecture and scale. Setting up internal coding standard guidelines..
- Act on items identified in retrospectives, implement process improvements in future sprints for continous development.
- Creation of deep learning Rig for training of Deep Learning Models.
- Development of *OCR* using Deep Learning end to end pipeline for English and Arabic printed documents.
- Development of Image enhancement module which includes traditional machine learning algorithms as well as deep learning models such as *SRGAN, CNN etc..*
- Development of Neural machine translation model using *Transformer model* for Eng-Ara Language pair on custom data.
- Development of Recreation of *PPTX* module for files directly from pdf files.
- *XML-Parsing* for *docx, pptx and xlsx* for data generation.

Data Analyst   July 2019 – Dec 2019
CogniTensor

- Implemented *YOLOV3*, *SSD* and Deep Learning Models for Image and Video Analytics using *OpenCV* and *TensorFlow*.
- Developed a Deep Learning Model *DWT-LSTM* for Time Series Forecasting of Metals Prices using PyTorch
- Contributed to development of Data Science Platform *DeepOptics* by developing optimization methods such as BayesOpt etc. Coordinated Statistical data analysis, design and information flow.

Research Consultant   Apr 2019 – Oct 2019
WorldQuant

- Researching different Quant or trading Strategies for financial instrument.
- Creating different mathematical models for financial instrument to be utilized as trading strategies in portfolio management.

Education

Netaji Subhas Institute of Technology, Delhi University, New Delhi   Augest 2017 – July 2019
M Tech • *Production Engineering* • CGPA: 8.5/10 **Institution of Engineers, Kolkata**   July 2013 – Mar 2016

Graduation • *Mechanical Engineering* • CGPA: 7.33/10

Technical Skills

- **IDE**: PyCharm, Visual Studio Code, Jupyter, Spyder, R Studio
- **Programming languages**: C/C++, Java, Julia, Latex, MATLAB, Python, R, Scala, Shell Scripting
- **Data Science & Machine Learning**: NumPy, NGBoost, NLTK, OpenCV, Scikit Learn, TensorFlow, Keras, PyTorch, Horovod, Pyspark, Pandas, MatPlotlib, Seaborn, LightGBM, XGBoost, TidyVerse
- **Software**: AutoCAD, AnSYS,MiniTAB, Design Xpert, MS Office Suite
- **Developer Essential**: Github, Bitbucket, JIRA, Trello, Confluence
- **Devops**: PostgreSQL, MongoDB, AWS, GCP, Docker, Django, Flask, FastAPI, Kubernetes

Areas of Interest

Mathematical Modeling • Optimization • Data Science & Big Data • Deep Learning • Machine Learning and Data Mining • Computer Vision • Natural Language Processing • Time Series Forecasting • Pattern Recognition • Probabilistic Representation & Reasoning • Distributed Computing

Academic Projects

Theoretical Analysis in Machining of Hard Metal during Electro-Spark Diamond Grinding
- A Mathematical Model for Material Removal Rate(MRR) in machining of Hard Metal based on first principle of process physics of Diamond Grinding and Spark Machining. Model is validated against the experimental data.

A Multi-objective optimization based on Genetic Algorithm for a Green Open Loop Supply Chain
- A Mathematical model proposed for cost optimization and carbon footprint minimization in open loop supply chain. Mathematical model is being optimized using genetic algorithm.

Assesment of Surface Integrity in Diamond Grinding - Based Hybrid Machining of Tungsten free Carbide Hard Metal
- A Neural Network for prediction of surface roughness in machining of Tungsten free carbide. Input parameters are discharge current, pulse on time, grinding wheel speed and depth of cut.

Publications

Assessment of Surface Integrity in Diamond Grinding - Based Hybrid Machining of Tungsten free Carbide Hard Metal
NFEST - 2019 (IOP: Journal of Physics)
- Modeling of Surface Roughness using Artificial Neural Network (ANN) with four Input Parameters namely Current, Wheel Speed, Pulse on Time, Depth of Cut.
- Experimental Data for Machining of TN20 (Russian Grade Cermet) is used to establish the Neural Network.

A Multi-Objective Optimization Based on Genetic Algorithm for a Green Open Loop Supply Chain
IEEE Conference
- A mathematical model is developed using certain basic assumptions in which cost and carbon dioxide emission is considered as response variable.
- Optimization is done using non-traditional optimization procedure i.e. using genetic algorithm to find trade-off between cost and carbon dioxide emission is found in terms of Pareto optimal front.

A critical review of process parameters of Fused deposition modeling, Journal of Material Science and Mechanical Engineering, p-ISSN:2993-9095; e-ISSN: 2393-9109, Volume 5, Issue 3, July −September pp. 138-141.
Krishi Sanskriti - Jawahar Lal Nehru University
- A brief review on different process parameters or variable on the properties of FDM processed parts with main focus on Mechanical and tribological aspects.

Polymer-matrix Nanocomposites; Processing, Challenges, and Applications: An Overview, Journal of Basic and Applied Engineering Research, p-ISSN:2350-0077; e-ISSN:2350-0255; Volume − 5, Issue -3; January − March 2018
Krishi Sanskriti - Jawahar Lal Nehru University
- A brief Review on types of Polymeric Nano-Composites, their different processing mechanism, challenges faced during their processing and their existing and potential applications.

Certifications

Practical Machine Learning with TensorFlow
Ashish Tendulkar, IIT Madras and Google India

Deep Learning
Dr Mitesh Khapra, IIT Madras

Data Mining
Dr Pabitra Mitra, IIT Kharagpur

Machine Learning for engineering and science applications
Dr Balaji Srinivasan & Dr Ganapthy Krishnamurthi , IIT Madras

Soft Computing
Prof Debasis Samanta , IIT Kharagpur

Functional Programming in Scala
Coursera, Martin Odersky

Sequence Learning
Coursera, Andrew NG

Machine Learning
Andrew NG, Stanford University

Achievements

- 5th standing in NSIT Alphathon - 2019, organized by NSIT and World Quant
- Qualified GATE - 2017 with 95 percentile, organized by IIT Roorkee

Personal Attributes

Attentive listener • Quick learner • Knowledge enthusiast • Creative