

MOHIT RAJPUT

ML | DL | AI | Data Collection | Data Engineering | ML Experiment Design
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Areas of Professional Interest	• Reinforcement, Unsupervised Learning and Recommendation System	
	• EDGE Devices based ML	
	• Data Collection, Data Engineering and Experiment Design	
	• Data Product Research and Development	
	• Statistical, Machine and Deep Learning based solutions	
	• Natural Language Processing (NLP), ChatBots & Computer Vision	
Work Experience	Cargill Digital Labs, Cargill Machine Learning Software Engineer	Jun'19-Present
	ML labs v2 setup <ul style="list-style-type: none">Defining ways to Work with ML projects and other applications having ML related featuresBrining sustainable practices for accelerated development while maintaining the agilityPlanning phase of data governance, 3rd Party Data Annotators, Portal development for data tagging, selection and versioning, data collection experiment designs and pipelines.	
	Estimating Growth Indicator of Chicken (POC) <ul style="list-style-type: none">Estimating the weight and age of the chicken based on video recording done using the mobile camera. Tags: Agile Experiment Setup & Design , Object Detection, Image Standardizer, Estimator, Ensembling	
	Defective Nugget Detection and Accounting (POC then MVP) <ul style="list-style-type: none">Defective Nugget Detection and Tracking on conveyor belt with output projected on display for manual removal. Tags: Jetson Nano, Raspberry Pi, Ardino Uno, Edge device, Object Detection, Tracking, on-premise, real-time	
	HR Chatbot (Myco) (MVP) <ul style="list-style-type: none">Initial product version was launched for Singapore and Australia with capability for form filling, ticket creation, ticket checking, easy data integration from excel sheet Tags: Rasa, Redis, NLU, NDM, NLG, NLP, Chatbot, MS Excel	
	Financial Commentary Generation (POC) <ul style="list-style-type: none">A utility for table-to-text based on template method was developed for the initial stage, b/c of the lack and too much fragmentation of data source this approach was deemed fit.	
	YOLO v5-v4 training and deployment integration on AWS suitable to multiple tailored needs. Tags: Computer Vision, Sagemaker, ECR, S3, Lambda Function, API Gateway, IAM, CloudWatch	
	Information Extraction from Ship Invoices (POC) <ul style="list-style-type: none">Extracting multiple information through the information that was shared in old and current emails. Tags: Text-to-Table, Analytics; Regex, Python Email to DB	
	Other <ul style="list-style-type: none">Streamlit based Computer Vision Utility for parsing, labelling, visualizing annotation, with support for Yolo threshold adjustment for object detector and evaluate performance.MiApp feature involving weather data visualization using the GIS data.	
	ShieldSquare (Radware) Data Scientist – R&D Associate Research Engineer – R&D	Apr'18-May'19 Jun'17-Mar'18
	Iterative Clustering and Learning based System to Separate traffic Apart (ICLSSTA) <ul style="list-style-type: none">Solely developed a framework, which develop and evaluate unsupervised learning solution in much depth and this from a single config file. Tags: Framework, Clustering, Anomaly, Outlier, Conceptual Drift Detection, Ensembling, Support all Dimension reduction, Anomaly, and Clustering Algorithm from Sklearn, Add. Custom Algorithm.	
	Adaptive Action Taking (AAT) <ul style="list-style-type: none">Developed a generalized module named which makes use of reinforcement learning to automatically take action on incoming traffic on the web property. Tags: Reinforcement Learning, Multi-Armed Bandit, Smart handling of Business Limits, Self-Adjusting	
	Deep Behaviour Analysis (IDBA) <ul style="list-style-type: none">Partially developed a module named Intent based, which utilizes LSTM to yield encoded features and scores that are used with supervised, anomaly and clustering. Tags: RNN, Auto-Encoder, Semi-Supervised Learning, Sequence Based Detection, Deep Learning	
	Threshold Online Reinforcement (ThOR) <ul style="list-style-type: none">Helped developed a module named, which makes utilizes online learning to develop a probability score distribution over of isotonic regression for action taking. Tags: Isotonic Regression, Online Learning, Self-Adjusting, Smart handling of Business Limits	
	Second Level Module Integration <ul style="list-style-type: none">Developed and implemented end to end machine and reinforce learning based solutions using ICLSSTA-AAT, IDBA-ICLSSTA-AAT, & IDBA-ThOR Tags: Semi-Supervised, Supervised, unsupervised, reinforcement learning, behaviour analysis.	

	<p>Titan Batch Analyser</p> <ul style="list-style-type: none"> Developed and Implemented, which utilizes multiple browser signatures, behaviour based rules, regular expressions and databases to generate a suspiciousness score to take action on traffic. <p>Tags: <i>SQL & Python Implementation, ETL, Advance SQL operations, Handling Multiple Datasets</i></p>
	<p>Rule Scripts</p> <ul style="list-style-type: none"> Developed and Implemented multiple rules which were based on network, device and browser fingerprint, and behaviour of the visitors. These were adequately balanced between causal and correlated, yielding negligible FP. <p>Tags: <i>Domain knowledge, Behaviour Analysis, Rules development</i></p>
	<p>Rule Mining</p> <ul style="list-style-type: none"> Created a Recommendation System for the highlighting possible bad signature coming in the traffic. <p>Tags: <i>Associate Rule Mining, Text Data Pre-processing</i></p>
	<p>Other</p> <ul style="list-style-type: none"> Developed Dashboard, Visualization and Analysis, spreadsheet to understand the whole behaviour of the traffic. Partially interactive visualization sheets were also developed in python. <p>Tags: <i>SQL and Spreadsheet/Python Implementation, Visualization, Result Sharing</i></p> <ul style="list-style-type: none"> Developing Dynamic Moving Collective Intelligence which can evolve while working across multiple sid.
Python Package Developed	<p>Algorithmic Machine Learning Exploration & Exploitation Tool (AMLEET)</p> <ul style="list-style-type: none"> A python package for multiple purpose code for logger wrapper, configuration, notification, cloud storage integration, local database, Redis Big query integration Other application involve numerous computer vision functionalities ranging from stream creation to prediction wrapper for face detection, recognition, pose estimation and such. Then there are functionalities for NLP related functions for data cleaning pipeline and even visualization. Additional support for Supervised and unsupervised ML integration is also available
	<p>COCO Transformation Utility (CTU)</p> <ul style="list-style-type: none"> A python package to perform the same transformation to coco-annotation as performed on the image. v0.5 release will have the capability to create synthetic dataset.
Patent & Research Paper	<ul style="list-style-type: none"> First Author. "System and method for detecting bots based on iterative clustering and feedback-driven adaptive learning techniques"; us US20200099713A1. Second Author. "System and method for detecting bots using semi-supervised deep learning techniques"; us US20200099714A1. First Author. "Electric field and current assisted alignment of CNT inside polymer matrix and its effect on electrical and mechanical properties", in International Journal for the Science and Technology of Polymers 2016.
Education	<p>Indian Institute of Technology, Roorkee Jul'12-Jul'17</p> <p>B.Tech. + M.Tech. (Dual Degree Course) in Metallurgy and Material Engineering, CGPA: 7.152/10</p> <p>Ministry of Human Resource Development (MHRD) Scholarship for M.Tech. as for qualifying GATE.</p>
	<p>Udacity Nano Degrees</p> <ul style="list-style-type: none"> Data Product Manager, 2021 Computer Vision, 2020 Artificial Intelligence, 2018
	<p>Certified Courses from Coursera, Edx, Udemy</p> <p>Details on this link https://mr901.github.io/resume/</p>
Skills and Tools	<p>ML Languages/Framework : Python , scikit-learn , TensorFlow, PyTorch</p> <p>Other Language: R, SAS, JAVA, C++</p> <p>Other: Google Big Query, Kafka, Elasticsearch, Docker, Selenium, Redis , MongoDB, Grafana, Kibana, HTML, CSS</p> <p>Databases: SQL, No-SQL</p> <p>Software: Tableau, Excel, XLMiner, Spyder, Jupyter Notebook, RStudio, Gimp, SolidWorks</p> <p>Cloud Computing Services: Google Cloud Platform, Amazon Web Services</p> <p>Cloud Data lakes: S3, Cloud Storage, Drive, Pcloud</p> <p>Hardware: Jetson Nano, Raspberry Pi, Arduino Uno, IP Cameras, Sensors, basic electrical devices and circuits</p> <p>Languages: English(SRW), Hindi(SRW)</p>
Projects	IP camera (RTSP protocol) to consistent HTML Live Stream with offline Data Sync
	Edge Device based CV application for counting of sheets processed in a workshop
	Face Detection, Face Landmark Detection and Face Recognition Wrappers
	Human Pose Estimation and Activity Recognition
	WhatsApp based Chatbot (Hack around way)
	Selenium based web scrapping and Web Application Control of Tinder & WhatsApp

Full resume can be found at: <https://mr901.github.io/resume/>