Lalu Prasad Lenka

Data Scientist

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Professional Summary

Data Scientist and seasoned developer with a strong knowledge of programming languages, data structures, algorithms and machine learning. I like finding creative, simple yet effective solutions to business problems using a combination of math, programming and business skills. I am super passionate about the reach of technology and when it comes to conquering new frontiers, I want to be there at the forefront. I love collaborating with exceptionally talented people, moving forward thoughtfully while prioritizing impact.

Skills

Analytical Skills - Machine Learning, Deep Learning, Natural Language Processing, Time Series Analysis, Predictive and Prescriptive Analytics.
Languages - Python, R, C++, Java, PySpark
DB Scripting - MySQL, PostgreSQL, Oracle, MongoDB
Data Science Tools - RapidMiner, Knime
ML Frameworks - Tensorflow2, Keras, PyTorch, MXNet
Big Data Tools/Skills - MapR, Hadoop, Spark, Kafka
Containerization - Docker Swarm, Kubernetes
Cloud Platforms - AWS, Azure

Professional Strengths

- Data Science – Data Preparation, Predictive Analytics, Model Validation and Deployment.
- Strong grasp on Statistical Analysis along with Machine Learning and Data Mining.
- Excellent problem-solving skills & programming skills.
- Experience of deploying end-to-end ML solutions to AWS cloud using AWS Kubernetes & Sagemaker with CI/CD pipeline.
- Strong grasp of object oriented paradigm and coding styles/guidelines.

Work Experience

Junior Data Scientist | Aptus Data Labs | July 2018 – Present

Working as a Data Scientist on data preprocessing, Machine Learning modeling, Advanced Analytics and Operationalization of Analytics. My responsibilities include designing, building and validating data models thereby creating end-to-end ML pipeline and deploying them in a production environment. I am also responsible to present the solution to senior management and to demonstrate the insights and value our solution brings on the table to the clients.

- **Project Title: Demand Forecasting & Demand Sensing for Inventory Optimization**
  Developed an inventory optimization platform that used time-series models for long-term forecasting and Demand Sensing for short-term forecasts. The combined forecast was more accurate and robust to real-world events like weather change, customer behaviour change etc. It supported optimal demand forecasting model selection out of many models like **LSTM**, **ARIMA**, **Holt-winters**, **hybrid models (Adaboost- LSTM Ensemble)**.
  Tools and Technologies: Python, Tensorflow, Keras, AWS Codedeploy

- **Project Title: Logbook Automation using Optical Character Recognition**
  Developed a deep learning model to recognize text in machine screens and log it directly to database to reduce human effort. Text extraction on an image in two independent steps: detection (Region Proposal Network) and recognition (using CNNs). Achieved mAP of 0.56.
  Tools and Technologies: Python, Tensorflow, Keras, AWS Sagemaker

- **Project Title: IoT Analytics Platform for Predictive Maintenance**
  Developed an IoT/Streaming Analytics platform to perform predictive maintenance of devices where data gets read from sensors, processed in spark, persisted in MapR FS. Finally, reporting is done using Grafana which shows predicted future failure point of the device.
  Tools and Technologies: MapR, Apache Spark, Apache Mahout, Scala, Java, Kafka

Education

- 2014–2018 | B.Tech in Computer Science and Engineering | College Of Engineering and Technology, Bhubaneswar | CGPA – 8.72
- 2011-2013 | Higher Secondary Education (Class XII) | D.A.V Public School, Talcher | 91%

Honors and Awards

- Excellence Award Oct 2018 | Aptus Data Labs

  Excellence award for recognition of outstanding performance, significant contribution to drive customer engagement and technology learning in the field of Analytics.

- **Project Title: Named Entity Recognition Engine**
  Developed an **LSTM** based **Named Entity Recognition** model based on IUPAC dataset to detect chemical names and medicines in a given medicine preparation document. The model achieved an F1 score of 0.85.
  Tools and Technologies: Python, Keras, Docker Swarm, gRPC

- **Project Title: Shipping Chain Optimization**
  Developed a self-learning **Genetic algorithm** based **Artificial Intelligence** algorithm which creates a cost-optimized and constraint-satisfied plan. The cost-efficient plans helped the client achieve annual savings of around 1M USD.
  Tools and Technologies: Python, MySQL, Docker

Data Science Intern | Aptus Data Labs | Jan 2018 – July 2018
Worked as a Data Science Intern mostly on **Exploratory Data Analysis** & **Time Series Analysis**.

- **Project Title: Time Series Analysis**
  Used extensive exploratory data analysis & data preparation to clean the data and used Time series forecasting algorithms to forecast the demand for next year.
  Tools and Technologies: Python, Power BI

- **Project Title: Document Classification Engine**
  Developed a Document Classification Model to classify given documents based on techniques used to prepare the medicine. Used **TF-IDF** score to create feature vectors and used **Random Forest** algorithm to build the model.
  Tools and Technologies: Python, MySQL, Keras, RapidMiner

Machine Learning Intern |Tata Consultancy Services | Jun 2017 – July 2017
Worked on a project "**Image Attribute Extraction**" which included extraction of text from product images and populate specific attributes with extracted text. Developed a combined architecture of **CNN & RNN** to build an Optical Character Recognition engine for text recognition.
Tools and Technologies: Python, Keras, OpenCV

Academic Projects

AI for chrome dinosaur (Final Year Major Project)

The project aimed to build a **Neuroevolution** based Artificial Intelligence bot that can play Chrome's dinosaur game. A simple **3-layer Neural Network** was used to map the inputs i.e. distance from the obstacle, speed and size of the obstacle to output i.e. keystrokes (up/down).
Tools and Technologies: Python, JavaScript

GESTURE TO SPEECH CONVERSION

The project aimed to build an application that could help speech & hearing-impaired people to communicate. We collected gesture (Indian hand signs) data using the Leap Motion Controller device and tried to build a classification model on top of it. **Tools and Technologies: Python, JavaScript, Leap Motion Controller**

Publications | Research

Gesture to Speech Using Leap Motion Controller | See Publication
Mar 5, 2017 | IEEE Delhi Section

This paper studies the possibilities of developing a gesture to speech and speech to text interface that uses Leap Motion sensor at its center for helping the substantial number of speech and hearing-impaired individuals (2.78% of the total population) in our country.

- Certificate of Excellence

  March 2018 | Zairza, CET Bhubaneswar

  Received Certificate of Excellence from Prof. in Charge of Technical Society for my contributions as Technical Coordinator.

- Winner in IEEE colloquium Bhubaneswar Subsection

  Nov 2016 | IEEE Bhubaneswar

  Won first prize for paper presentation at IIT Bhubaneswar **IEEE colloquium**.

- CET Merit Scholarship

  College of Engineering and Technology, Bhubaneswar

  Received CET **merit scholarship** every year of undergraduate studies being a meritorious student.

Certification

- Deep Learning Specialization | Coursera | deeplearning.ai
- Statistics with R Specialization | Coursera | Duke University
- Machine Learning A-Z Hands-On Python in Data Science | Udemy
- Data Science A-Z™: Real-Life Data Science | Udemy
- Python: Design Patterns | Udemy

IELTS Score – Band 8