

ARDHENDU SINGH

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CAREER OBJECTIVE

Highly accomplished and visionary professional with a proven track record of spearheading AI/ML initiatives within the Fintech industry. Recognized for exceptional leadership in driving teams to develop end-to-end solutions, with expertise extending across diverse domains, including NLP, ChatGPT, data science, database management, and AWS architecture. With a remarkable history of leading successful projects, I have overseen the development of cutting-edge systems, including an auto loan fraud detection platform, sales prediction models, and strategic product growth strategies. Eager to leverage my skills and experience to drive innovation and maximize business value in the dynamic landscape of AI/ML powered industry.

WORK EXPERIENCE

POINT PREDICTIVE, SAN DIEGO, CALIFORNIA

Senior Data Scientist, Feb 2021 - Present

- **Shape the direction of key data science areas:** Led the development and deployment of a robust XGBoost model for loan fraud detection, contributing to enhanced segmentation strategies and improved forecasting accuracy, generating over \$1 million in ARR.
- **Understand product usage patterns and trends:** Collaborated cross-functionally with product and sales teams to analyze client data, enabling informed decision-making and customization of sales pitches.
- **Generative AI:** Leveraged prompt engineering and RAG techniques to improve ChatGPT responses, seamlessly integrated them with internal vector databases for optimized output. Fine-tuned Llama-2-7b-chat-hf and Mistral-7B-Instruct models using QLoRA tailored to specific business requirements.
- **Productionalized Fraud and LLM models:** Deployed fraud models and LLM model in AWS environment, leveraging API Gateway, SageMaker, and Lambda for seamless integration and scalability.
- **Performance Metrics Development:** Engineered and implemented key performance indicators (KPIs) such as hit rate and lift to monitor and enhance the performance of machine learning models. Provided a systematic approach to dashboard creation and performance measurement, aiding in continuous improvement.
- **Built Data Lake:** Orchestrated the migration of databases from AWS RedShift to Snowflake, implementing Snowflake pipes, streams, and tasks for improved data management and accessibility. Designed AWS DMS and ETL tasks to ensure seamless data transfer and processing.
- **Database Consolidation:** Led the design and implementation of consolidating millions of records using NLP and tiktoken embedding library, enhancing database organization.
- **Deep Learning model:** Built a deep learning fraud detection model using PyTorch and Fast.ai, optimizing 35 million parameters.
- **DevOps:** Implemented cost-effective AWS Spot computing solutions, resulting in annual savings of \$60,000 for model building. Expertise in DevOps tools such as MLFlow, Docker, Terraform, SQL, dbt, Kubernetes, and Jenkins.

LAUNCHABLE, SAN JOSE, CALIFORNIA

Lead Data Scientist, Mar 2020 – Jan 2021

- **Strategic Market Segment Analysis:** Executed comprehensive market segment analysis to identify key industry segments and job titles, optimizing Launchable offerings for maximum impact. Contributed valuable insights into targeting strategies, improving overall product positioning.
- **Test case analysis:** Utilized PySpark to build an XGBoost model for test case analysis, predicting the impact of code changes on test case failure.
- **Customer Segmentation:** Conducted customer segmentation by analyzing source code changes and test suite data from GitHub/Jenkins.

APPLIED MATERIAL (COGNIZANT), SANTA CLARA, CALIFORNIA

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Lead Data Scientist in Center of Excellence AI/ML Division, Jan 2019 - Mar 2020

- **Text Analytics:** Built and deployed a U.S. tariff prediction model using text analytics, resulting in annual savings of more than \$700K.
- **Cost Prediction Model:** Successfully built and deployed a robust time-series analysis-based cost prediction model. This initiative significantly enhanced forecasting accuracy, leading to more informed **decision**-making and improved resource allocation.
- **Sales Forecasting:** Developed and deployed advanced sales forecasting ARIMA time series models. This initiative contributed to the accuracy of sales predictions across multiple product categories, supporting strategic decision-making and resource planning.
- **Manage stakeholders and define project OKRs:** Led a team of data scientists, providing project planning, technical guidance, and progress updates to executive stakeholders.
- **Mentor junior data scientists:** Mentored and guided junior team members on project planning, technical decisions, and code review processes.

CISCO, MORRISVILLE, NORTH CAROLINA

Senior Software Engineer, Jun 2007 – Dec 2018

- **Automatic Speech Recognition (ASR/NLP):** Developed a deep neural network for keyword spotting using depth wise separable CNN (DS-CNN) and Connectionist temporal classification (CTC) using Mel-frequency cepstral coefficients (MFCC).
- **Alexa skill (NLP):** Build Alexa skill to retrieve information from web pages stored, parsed, and analyzed by IBM Watson conversational skill. Connected Alexa queries to IBM Watson conversational service through an intermediary web server supporting REST API using Node.js framework. Presented in NC-DataPalooza.
- **Conference Room occupancy (NLP):** Built two predictive models using the Hidden Markov Model (HMM) and LSTM to analyze gigabytes of big audio data generated by Cisco conference phones predicting whether a conference room is occupied.
- **Predict service renewal:** Building a prediction model for Cisco's eight-billion-dollar annual service renewal business using XGBoost decision tree and neural network RNN with data size more than 20 Gigabytes with millions of observations.

EDUCATION

Associate of Data Science

Artificial Intelligence Nanodegree

Master of Science (Computer of Engineering), not completed

Bachelor of Engineering (Computer Engineering)

North Carolina State University, Raleigh

Udacity

University of Cincinnati

Delhi Institute of Technology

ADDITIONAL SKILLS

- **Agile:** 5 years of working with and driving project using Agile methodology
- **Programming:** Proficient in Python (8 years), PyTorch, PySpark, NLTK, Scikit-Learn, TensorFlow, Keras, C++, Java
- **Visualization tool:** Tableau, matplotlib, Plotly
- **Analytical and Statistical Skills:** Text Mining, descriptive and inferential statistics
- **Machine Learning:** Deep Neural Network: RNN, LSTM, CNN, Bi-Directional RNN encoder/decoder
- **Classification:** KNN, SVM, Decision Tree
- **Cluster analysis:** Hierarchical, K-mean, DBSCAN, Bi-Cluster
- **Dimensionality Reduction:** PCA, LDA, kernel PCA

PROFESSIONAL EXPERIENCE

ENTREPRENEURSHIP

Co-founder

May 2015 - Dec 2015

Opened a start-up with two of my partners. Developed an analytical software that would allow Accountable Care Organization (ACO) dealing with retirees and senior citizens to identify patients that may become ACO's highest cost incurring patient and thus helping ACO to take preventive measures to reduce cost.

Product Owner (Cisco)

May 2011 - Apr 2012

Defined marketing and product requirements for AppHQ, a Cisco-developed android app store for enterprise devices. Helped in negotiation between PartnerPedia and Cisco to reduce the

development cost of AppHQ to \$100,000 and from \$110,000. Designed and managed GoTo Market support for AppHQ. Helped in creating a three-tier pricing strategy for AppHQ that includes free trial, discount, and setup fee. Helped in developing the ordering process and sustaining of AppHQ. Worked with the legal team and Advance Service for license management for AppHQ.

LINKEDIN BLOG

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- <https://github.com/ardsingh>