Shashank Shekhar Sahoo

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Summary

Pragmatic Senior Data Scientist with **9+ years** of core expertise in architecting and implementing end-to-end novel software solutions pertaining to Artificial Intelligence, Data Science, Advanced NLP, NLG, Computer Vision, Chatbot analytics, Predictive modelling, Demand forecasting and Pattern detection. Currently, seeking an excellent opportunity to collaborate with enterprises and businesses to solve their challenging data-driven problems and help them realize success. I strongly aspire to opt roles for **Principal Data Scientist** or **Machine Learning Researcher/ Specialist/ Architect/ Manager**.

Skills Matrix

	Particulars
Tools, Libraries & Frameworks	• ***Large Language Models*** **:** Google Flan-T5 (XL,XXL), ChatGPT, GPT4, Alpaca, LLaMA, BLOOM, Cohere • ***Mathematics & Statistics*** : NumPy, Pandas, SciPy • ***Deep Learning*** : TensorFlow, Keras, PyTorch, Theano, Caffe, scikit-learn • ***Computer Vision*** : OpenCV, PIL, fastai, Imutils, SimpleCV, Pytesseract, scikit-image • ***Time Series Analysis*** : Prophet, ARIMA • ***NLP*** : Transformers, spaCy, NLTK, Gensim, CoreNLP, Hugging Face • ***NLG*** : GPT-3, GPT-Neo, XLNet, Transformers • ***Chatbot*** : Dialogflow, RASA, IBM Watson • ***MLOps*** : Docker, Kubernetes, Kubeflow, MLflow • ***Data Visualization*** : Seaborn, Matplotlib, Plotly
Domains / Applications	Generative AI, Natural Language Processing, Machine Learning, Neural Networks, Deep Learning, Reinforcement Learning, Applied Robotics, Text Analytics, Image Analytics, Predictive maintenance, AI Assistant, Recommendation Engine
Algorithms Architecture/ Platforms	Transformers, BERT, GPT, CNNs, RNNs, LSTMs, GANs, MLPs, SOMs, AlexNET, VGG16, Sequence Modelling, RASA, Speech-to-Text Modelling, AI System Design, Amazon Sagemaker, Colab, Autoencoders, GoogleNet, Random Forest, Boosting
Languages	Python, R, JavaScript, Scala, SQL, MATLAB, Embedded C, C++, Shell Scripting
Cloud Services	• Amazon Web Service (AWS) • Microsoft Azure • Google Cloud Platform (GCP)

Core competencies

- Specializes extensively in unstructured data processing, analytics, management, cleaning, pre-processing, pruning and augmentation.
- Competent to handle integration, architecture, networking and process management in multi-tenant AI solutions comprising of multiple deep learning models being stacked together to deliver concurrency and high throughput by distributed training paradigm.
- Managing production demand and workloads with Azure Machine Learning and MLOps governance using Docker and Kubernetes.

- Proficient in designing, building, testing and deploying large-scale production grade Machine Learning models both within premises and on cloud infrastructure served by Microsoft Azure, Amazon AWS and Google GCP.
- Strong expertise in prototyping inter-disciplinary AI projects such as Self-Driving Electric Vehicles with insightful understanding of hardware controls, sensor fusion, path planning, localization, object/lane detection and Deep Learning.
- Indisputable thinking acumen to design versatile state-of-the-art AI products and solutions that can go live faster.
- Pragmatic paradigm of coding with best practices and unparalleled knack for code quality and coverage.

Career Highlights

- Designed and delivered AI software products to ***diverse clients from retail, automotive, finance, e-commerce, digital marketing, pharmaceutical, sales, e-advertising, robotics, e-learning and digital streaming sectors.***
- Developed the big-data based ***distributed training and inferencing pipeline*** on Spark for parallel ML workloads.
- Implemented a full-scale lead conversion and ***recommendation model pipeline*** using machine learning in conjunction with statistical computations to accurately predict the conversion probabilities of any new lead user from free-software version to paid-software version for evaluation of pilot customer engagement campaign.
- Conceptualized, designed, developed and validated the realistic performance of an ***autonomous self-driving*** golf-cart from foundation powered by Computer Vision, Deep Learning and Artificial Intelligence knowledge spheres.
- Earned the reputation of unparallel product quality in software architecting for Facial Recognition based Intrusion and Person Detector systems driven through Deep Learning, Image Processing, Face NET, Deep Face and Computer Vision.
- Custom Object Detection pipeline designing with TensorFlow APIs and manually labelled custom datasets.

Work Experience

KPMG Ignition Tokyo – Tokyo, Japan
(Jan 2021 — Present)
Senior Data Scientist – Artificial Intelligence, Data Science, Natural Language Processing, Custom OCR (tesseract)

- Developed a **custom knowledge processing pipeline** for exclusive **legal domain documents** to get processed and stored as **vector databases**. It gets linked with prompt based Question Answering system with **LLM as backend** that interprets user instructions and selects all the relevant document vectors from database and **synthesises most appropriate and optimised response** to render into cross-platform mobile application.
- Collaborated with high-paced business teams to implement sophisticated machine learning architecture for ***training and inferencing custom document processing engine*** which takes both machine readable and non-machine readable documents and apply pipelines for ***simpleOCR, Form Recognizer, Doc Classification, Information Retrieval OCR and Doc Formatter***. These pipelines work in synergy to extract images, texts, tables, logos, hyperlinks, barcodes, QR codes and email address from any given input document.
- Enhanced the performance efficiency of ***closed domain neural search engine*** for Audit domain to rank and optimize finance search results using ***BM-25 and topic modelling*** in Python.
- Conceptualized with Proof-of-Concept to perform ***automatic Reading Comprehensive via Q&A system*** powered by spatial word embeddings (SWE) and ensemble models with ***RASA conversational AI framework***.

NESS Digital Engineering – Bengaluru, India
(May 2020 — Dec 2020)
Lead Data Scientist – Artificial Intelligence, Data Science, Natural Language Processing, Data Analytics, Database Management

- Worked closely at pre-sales level client engagements to translate business problems into data solutions and delivering them end-to-end. Used clustering and reinforcement learning algorithms to ***automate service ticket resolution*** by laptop manufacturing giant.
- Catered advanced technology-based solutions in deep learning paradigm for NLP using GPT-3 Transformers to ***build auto-answering system with learnable contextualization*** and transfer learning concepts.

- Designed complex data models for ***predicting the breach time of SLAs*** which is being governed by sophisticated rules.
- Managed analytics and wrangling of huge data volumes from data lakes hosted both in private and public clouds by using advanced statistics, optimization, and mathematical skills.
- Integrated AWS Lambda based ***serverless technologies*** with various micro-services through API management and backend data services.

ZS Associates India Private Limited – Pune, India
(Jan 2019 — Apr 2020)
Senior Machine Learning Engineer – Machine Learning Application, Serverless ML (Machine Learning), Auto ML, Azure, AWS

- Developed the crux of ***analytics predictive engine*** with individual capacity powered by Advanced Machine Learning and Data Science on sales and marketing data from Microsoft clientele to obtain potential valuable customer predictions through ad-hoc, batch and real-time processing of relational data and to recommend product roadmap through ***ML graphs***.
- Real-time recommendation system to provide NLG rendered insight at the behest of pharma sales executive to monitor the recommended plan with "***Next Best Action***" oriented towards enhancing sales value per pharma product.
- Advanced feature engineering using NLP on extremely unstructured textual phrases obtained from "***user-comments***" on UI (User Interface).

RPG Enterprises Ltd., Automotive Robotics India Private Limited, Magneti Marelli India Private Limited
(June 2014 — Dec 2018)
Associate Innovation Engineer – Data Analytics, Visualizations, Artificial Intelligence, Applied Robotics, Internet of Things, MATLAB, Automotive System Controls

- Delivered an efficient ***self-driving electric golf cart*** encompassing custom object detection, face-recognition, pattern-recognition, natural language processing and personal voice-assistants for USA & Europe based benefactors as a capability prototype.
- MATLAB based full strategic ***model design and engineering of software control modules*** equipped in commercial automobiles.
- Developed ***AI capabilities for hardware platforms (Raspberry-Pi)*** by building ***infotainment applications*** and AI based user interaction with system both during normalcy and emergency scenarios.
- Designed and developed cross-platform mobile applications to diagnose vehicles in less than conventional time over OBD-II network with ***IoT and Bluetooth communication*** technologies.

Education

- Bachelor of Technology (Honours)
- National Institute of Technology, Jamshedpur (India) Aug 2010 - May 2014
- Electronics and Communication Engineering
- CGPA: 8.93/ 10.0

Certifications

- Deep Learning Specialization
- Azure Machine Learning Certification
- Serverless Machine Learning with Tensorflow on GCP
- Structuring Machine Learning Projects