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www.linkedin.com/in/sagarnildas (LinkedIn)
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Top Skills

Machine Learning
Deep Learning
Monte Carlo Simulation

Languages

English (Full Professional)
Hindi (Full Professional)
Bengali (Full Professional)

Certifications

GAN Specialization
Become a Data Scientist
Data Science Foundations: Data Mining
Data Visualization: Storytelling
Statistics Foundations: 1

Honors-Awards

Dean's Fellowhip

Publications

Simultaneous Localization and Mapping (SLAM) using RTAB-MAP
Enhancing Early Diabetic Retinopathy Detection through Synthetic DR1 Image Generation: A StyleGAN3 Approach
Calculating Customer Lifetime Value and Churn Using Beta Geometric Negative Binomial and Gamma-Gamma Distribution in an Nft-Based Setting
Robot localization in a mapped environment using Adaptive Monte Carlo algorithm

Sagarnil Das

Machine Learning & Deep Learning Engineer | Intel Edge AI Scholarship Winner | Ex Udacity Machine Learning Mentor | Ex NASA Researcher | Kaggle Expert
Kolkata, West Bengal, India

Summary

Machine Learning & Deep Learning Innovator | Transforming Industries with Cutting-Edge AI Solutions

With over a decade of experience in Machine Learning (ML) and Deep Learning (DL), I have consistently delivered impactful AI solutions across healthcare, retail, education, and government industries. My career journey includes pivotal roles in renowned organizations such as:

New York State Department of Health (Affordable Care Act - OBAMACARE)
Computer Science Corporation (Fortune 500 Company)
Udacity (Fortune 500 Company) as a Machine Learning Mentor
Future Group India (India's leading $130Bn retail giant) as a Machine Learning Manager
Hopscotch (Leading child retail company in India) as a Data Science Lead

Key Achievements in ML & DL

• Developed scalable AI ecosystems, driving adoption of healthcare AI at Artelus, achieving groundbreaking sensitivity rates for Diabetic Retinopathy (DR) detection (98.7%).
• Engineered unsupervised learning pipelines leveraging frameworks like SimCLR and BYOL to pre-train robust medical foundational models.
• Innovated deep learning architectures such as U-NET and StyleGAN3, delivering superior segmentation and synthetic data generation capabilities.
• Pioneered retail solutions, including dynamic pricing models, recommender systems, and Bayesian optimization, boosting operational efficiency and revenue margins.

• Created no-code ML platforms with seamless MLOps integration, empowering over 7,000 users.

Certifications & Education

• Andrew Ng's Deep Learning Specialization
• MIT MicroMasters in Data Science
• Udacity Flying Car & Robotics Nanodegrees
• 40+ additional certifications in ML/DL, TensorFlow, and PyTorch

As a research contributor, I've published in international journals on topics like robot localization and SLAM (Simultaneous Localization and Mapping).

Technical Expertise

• Deep Learning: TensorFlow, PyTorch, GANs, U-NET, Transformers, LLMs
• Applied ML: Bayesian Optimization, Time-Series Forecasting, Reinforcement Learning
• Full-Stack Deployment: Kubernetes, PostgreSQL, MongoDB, React, NextJS
• AI in Healthcare: Retinal Imaging Analysis, RNFL Thickness Measurement

Let's Collaborate

I'm passionate about harnessing the power of AI/ML to solve real-world challenges, whether in healthcare, retail, or any other domain. Open to sharing knowledge, and building connections with professionals in the Machine Learning and Deep Learning space.

Feel free to connect at sagarnildass@gmail.com

#MachineLearning #DeepLearning #AI

Experience

Artelus India

Director & Chief Technology Officer
March 2023 - Present (2 years 3 months)
Kolkata, West Bengal, India

• Spearheaded the architectural design and strategic roadmap of the Artelus Technology Ecosystem, creating an integrated, scalable infrastructure for AI driven healthcare solutions. Defined long-term product vision and technology strategy to position Artelus as an industry leader.
• Achieved significant increases in product adoption and client retention by leading the development of the ARTELUS Technology Ecosystem, steering scalable AI model deployment on cloud platforms like AWS and Azure.
• Conceptualised LLM-based mental health app, incorporating an AI-enabled Patient-360 engine for holistic diagnosis, including emotion detection and suicidal tendency analysis.
• Engineered a solution that runs 8 LLM models in parallel and in real-time, significantly enhancing the
diagnostic capabilities of healthcare providers.
• Created a framework combining natural data and unlabelled fundus images for unsupervised pre-training of robust medical foundational models using SimCLR and BYOL, enabling data-efficient generalization across various medical tasks.
• Innovated synthetic data generation using StyleGAN3 model, enhancing DR1 image datasets. Conducted multiple statistical tests like Chi-Square, Mann-Whitney U-Test.
• Constructed Inference Engine SaaS app, enabling project and point-and-click model training with
deployment to Kubernetes servers via FastAPI and Next JS based interface.
• Refined U-NET architecture deep learning model, achieving accurate segmentation of retinal layers for precise RNFL thickness and CDR measurements.

CyberDeck AI
Founder & Machine Learning Engineer
March 2022 - March 2023 (1 year 1 month)
India

• Founded and created a complete no-code platform for end-to-end Data Science and Machine Learning. This platform is capable of performing Data Processing, Exploratory Data Analysis, Inferential Statistical Tests, Machine Learning, Univariate and multivariate Time-Series Forecasting, Clustering and MLOPS at the click of a mouse. Wrote the code for the whole machine learning and deep learning backend of this platform.

• Responsible for the complete cloud deployment and management of the app. The app currently runs in a Kubernetes cluster as a microservice on AWS. Set up the Database structure, Load Balancers, Auto Scaling, Grafana and ELK stack for monitoring. S3 and RDS for storage. Numerous Lambda functions also run for different in-app purposes.
• CyberDeck got selected in Startup-India, an initiative by the honorable Prime Minister of India to help boost the most promising startups in India.
• We also got selected in Microsoft Startup Founders Hub and received $25000 in credit in Azure cloud.
• We also got selected in AWS activate and received a $10000 credit in AWS.
• Onboarded and managed around 7000 users for the free tier of CyberDeck.

Hopscotch
Data Science and Machine Learning Lead
September 2020 - March 2022 (1 year 7 months)
Bengaluru, Karnataka, India

• Improved CTR, RPI, and UPI by creating an optimisation model for Product Listing Page Sort, utilising a tree-based ML model to predict a weighted sum of CTR, RPI, and UPI, and incorporating SHAP values for feature weighting in the ranking framework. Implemented multi-task neural networks with multimodal feature spaces for ranking the products. Implemented Boltzman exploration methods for mitigating positional bias. Created A/B testing frameworks along with team-draft interleaving (with Bootstrap resampling) to quickly iterate through multiple models and select the best model to productionize.

• Implemented a Dynamic Pricing model based on Bayesian Optimization and Markov chain Monte Carlo Simulation. The pricing model initially predicts an optimized price based on historical price, demand and traffic data. After the initial price is predicted, a second demand forecasting model is used to understand the seasonality of the product and adjust the price accordingly. Within 2 months of implementation for 10 product types, the total Margin has gone up by 4% with Individual margins at a product type level increasing by 30% all the way upto 172%.

• Created a purchase/demographics based user segmentation model with an unsupervised ML algorithm (Gaussian Mixture model) for better targeting of users.

• In order to increase the LTV of customers, currently building a customer survival analysis with Kaplan Meier and Cox’s proportional Hazard models

as these works much better with censored data than a regression model. Created a CLTV model using Beta Geometric Negative Binomial Distribution and Gamma-Gamma mixture models.

• Implemented multiple recommender systems for Product to Product (Word2Vec and BERT embedding method) and Customer to Product (Two Tower Neural Networks, Deep Retrieval, Bandit Based algorithms like UCB and Thompson sampling). This increased the PDP Click-Through Rate from 1.3% to 3.2%.

Tathastu

Manager, Data Science and Machine Learning

October 2017 - September 2020 (3 years)

Kolkata Area, India

• Implemented a virtual try on pipeline, where given a person's image and a cloth image, the model generates a new image of the person dressed with the new cloth. Implemented using JPPNet, OpenPose and novel Virtual Try On module. This model also has the ability to generate limbs e.g if the person was originally dressed in full sleeve dress and he/she chooses a sleeveless one.
• Created a novel Encoder – Decoder deep learning architecture chained with Monte Carlo based error correction and Attention mechanism to predict which customers will visit in the following week. Effectively targeting only those customers reduced the campaign operation cost by 4%. Presently finishing up the paper on this and awaiting publication.
• Created a supervised machine learning model (Xgboost) to predict how much a customer will spend in his/her next visit resulting in a margin of 7%.
• Created an unsupervised machine learning model (Gaussian Mixture model coupled with PCA) to segment customers based on purchase pattern and demographics for effective campaign management.
• Created a deep neural product embedding model to find the best potential customers for a product promotion campaign. Combined with the visit prediction model, this resulted in a 4% reduction in operation cost.
• Created a LSTM model to predict the gender of a customer from his/her name. The same mechanism was scaled to predict mother tongue, religion, community etc in order to complete the Member 360 Framework.
• Created a Deep learning model (YOLO/Faster RCNN) to predict customer's age, gender and emotion from live video feed. Use case still being developed for this work.
• Campaign Budget Optimization with Machine Learning and Linear Optimization method.

• Dynamic price optimization at a sku level. The method taken is a Bayesian optimization method coupled with Markov Chain Monte Carlo (MCMC).

EduPristine Inc.
Big Data and Data Science faculty
May 2017 - October 2017 (6 months)
India

• Worked as an active faculty member for the Big Data and Data Science Certification Course with batches of 40 - 50 students on average.
• Organizing interactive sessions, demos and real-life project solving in Banking domain, retail sector and social media. The main challenge in this part is conveying the goal effectively to a huge batch of students and successfully accomplishing them together.

New York State Department of Health
2 years 4 months

Senior Data Specialist
April 2016 - May 2017 (1 year 2 months)
Albany, New York Area

• Migrated all data from Oracle to Hadoop framework, data analysis and modeling with Pig, Hive and Python .
• Created unsupervised learning models to cluster different groups of Medical facilities together based on locations.

Junior Data Specialist
February 2015 - April 2016 (1 year 3 months)
Albany, New York Area

• Reduced the rejection rate by 5% and incidence of defects by 20% through measures such as proactive data analysis and implementing machine learning models for anomaly detection.

Computer Sciences Corporation (CSC)
Database Developer
December 2013 - December 2014 (1 year 1 month)
Albany, NY

• Developed for the original Affordable Care Act team (ObamaCare), which provided healthcare to 32 million Americans.
• Developed SQL utilities and scripts to monitor database performance.

UCF
Research Assistant

May 2012 - May 2013 (1 year 1 month)
Orlando, Florida Area

• Performed baseline measurement tests on the PV modules like IV measurements, Dry leakage Tests, Electroluminescence, IR, and Wet Leakage Tests.
• Studied the evolution of residual stress in the TBC system using in-situ transmission synchrotron X-ray diffraction in Argonne National Lab, Chicago.
• Worked with the NASA funded SBIR project regarding the CMAS and the overlay coatings (La2Zr2O7).
• Developed models which produced 50K x 50K dense / partial dense / sparse matrix to assess state of the art mitigation solutions to the thermal and radiation problems.

NASA - National Aeronautics and Space Administration
Research Scholar
August 2012 - April 2013 (9 months)
United States

• Computed the residual stress in the TGO layer by Photoluminescence and Raman spectroscopy.
• Studied the evolution of strain in the TBC system by taking depth measurements using in-situ transmission synchrotron X-ray diffraction.
• Used the measured strain values to understand the critical stages of strain evolution within the TGO.
• Worked with the NASA funded SBIR project regarding the CMAS and the overlay coatings (La2Zr2O7)

Florida Solar Energy Center
Research Assistant
July 2011 - May 2012 (11 months)
Orlando, Florida Area

• Worked on a project of a Glass Manufacturing company and performed baseline measurement tests on the PV modules like IV measurements, Dry leakage Tests, Electroluminescence, IR, and Wet Leakage Tests.
• Performed Rapid Thermal Processing of CIGS solar cells, measurement of sheet resistance of ZnO layer, and UV-vis measurements.
• Published a paper titled "Outdoor high-voltage study of commercially available PV modules from leading manufacturers in hot and humid conditions"

Education

University of Central Florida

Master of Science - MS, Materials Science · (2011 - 2013)

Udacity

Deep Reinforcement Learning Nanodegree, Artificial Intelligence · (December 2022 - December 2022)

Udacity

Flying Car and Autonomous Flight Engineer Nanodegree, Artificial Intelligence · (April 2021 - May 2021)

Udacity

Robotics Software Engineering Nanodegree, Robotics · (2018 - 2018)

Udacity

Artificial Intelligence nanodegree, Artificial Intelligence · (2017 - 2018)