Nishanth G

< /Software Engineer >

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Summary

Experienced software engineer with a strong focus on machine learning and AI.Passionate about cutting edge technology and solving real world problems with experience in building and managing scalable microservices, pipeline's. Skilled in backend engineering and infrastructure, including AWS, Docker, and Kubernetes. Accomplishments include designing and building integration pipelines for handling terabytes of data in real-time, developing deep neural networks using state-of-the-art attention mechanisms, and employing optimization algorithms to optimize model accuracy. Proficient in Python, Ruby, and C++, and experienced with frameworks such as PyTorch, Keras, Django and Flask. Familiar with PostgreSQL, Redshift, and DynamoDB databases.

Experience

G2, Bangalore -- Software Engineer II July 2022 – Present

Project - G2 track is a one platform to easily manage and optimize a company's software. Identify, map, and monitor all software and spend in one, unified location and track employee's usage trends and find tools worth the team's investment.

- My responsibilities in the Track team included designing and building SSO integrations for various clients, which involved real-time tracking, processing, and mapping of individual instances of each application for customers to provide actionable insights which is responsible for saving approx **25% of customers revenue**
- Implemented cutting-edge anomaly detection algorithms to detect unusual software usage patterns that could indicate security breaches, system failures, or other issues that needed to be addressed
- Built Sidekiq job systems in place to support asynchronous, reliable message processing with batched jobs, priority queue, and job death handlers, improving the speed of real-time data processing by **10 times**.
- Responsible for the ownership of Azure, Gsutie, and Atlassian SSO integrations, utilizing advanced algorithms and machine learning to streamline the process and optimize software management

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Zuora, Chennai -- Software Engineer II October 2021 - Present

Project - Zuora Revenue is a revenue automation software that automates and manages every process in the revenue cycle and can provide you with real-time insights to instantly recognize, reconcile, and analyze revenue for subscriptions, products, and usage-based services.

- My responsibilities in the Revenue team were designing and building integration pipeline between Zuora Revenue and Zuora Billing which involves transfer and processing of Terabytes of Data in near real time which is responsible for driving **30% of Zuora's revenue**
- Developed and deployed a cutting-edge ensemble of deep neural networks based on the Transformer architecture, utilizing state-of-the-art attention mechanisms, to significantly enhance Zuora's revenue recognition process. The resulting model **improved revenue recognition accuracy by 8%**, reducing errors and providing more precise revenue forecasting. Additionally, through extensive hyperparameter tuning and efficient data processing pipelines, we were able to scale the model to handle massive amounts of data with ease, ensuring fast and reliable performance at all times.
- Developed a deep neural network model using TensorFlow to detect revenue leakage, resulting in a **10% increase in revenue recognition accuracy**
- Employed a Bayesian optimization algorithm to optimize hyperparameters for the XGBoost model, which resulted in a **3% increase in model accuracy**.
- Deployed the machine learning models using Docker and Kubernetes for scalability and improved performance.
- Ownership of Microservices which involves collecting ,processing and mapping of data between Revenue and Billing through RESTful API's which are built on top of Flask, integrated through Jenkins pipeline with AWS ECS Fargate and AWS EC2 based ECS Cluster
- Optimize performance of Zuora Revenue by fixing throughput limitation of data transfer in the pipeline by introducing Target groups and asynchronous callbacks which increased data transfer size **by x5 times the original design**
- Manage and Build CI/CD pipelines with Integrating Automated Testing
- Conducts Daily stand up and takes responsibility for the deployment of all services and builds under Zuora Revenue

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Mad Street Den, Chennai — Software Engineer June 2019 - October 2021

Project - VueModel which is an Automated On-Model Fashion Imagery solution that helps improve engagement and conversions on E-Commerce platforms using ML and AI

- Development and Administration of Highly Scalable Systems and Microservices that are built to handle and support 3-D Model Generation using Generative Adversarial Networks in real time
- Built Deep Learning algorithm to determine 3-D Object Orientation from image using OpenPose and ResNet -50
- Implemented and Configured auto scaling policies that saved **roughly 45 % of infrastructure cost**
- Optimize performance and Enhanced data processing speed by tuning complex SQL queries , handling Asynchronous tasks while taking advantage of redis queues , multiprocessing and generators
- Re-engineered data pipelines that communicate to and from Microservices during training and testing phases of the generative model to handle and support large bandwidth of data with the help of creating and managing specific target groups
- Mentored junior developers on the team and document best practices within the organization
- single-handedly built and maintained infrastructure and Backend during initial stages of Project

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Mad Street Den, Chennai — Software Engineering intern December 2018 - June 2019

Project - Vue.X single A.I. platform that provides eCommerce teams with everything they need to build, test, and scale personalized shopper journeys

- Built a Django application that stores and processes data, such as extraction of catalog, analyze it with user behavior, such as most recently viewed items and frequently visited pages/products.
- Utilized natural language processing techniques to analyze customer reviews, feedback, and social media data to extract valuable insights and sentiment analysis. This helped in understanding customer preferences and purchase behavior, which further helped in improving product recommendations and personalization.
- Implemented collaborative filtering techniques such as matrix factorization and nearest neighbor algorithms to create personalized recommendations for each user based on their purchase history, browsing behavior, and other user-specific data.
- Employed deep learning techniques such as convolutional neural networks (CNN) and recurrent neural networks (RNN) to generate product recommendations based on visual data, such as product images and videos.
- Containerized the Django project using Docker to improve portability, reproducibility, and scalability.
- Migrated the local database to AWS RDS, which provided a more scalable and reliable database solution.
- Ran and managed the Django servers for different environments (development and production) in AWS EC2, which helped in ensuring the application's performance, scalability, and availability.

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Mavens-I, Chennai — ML intern June 2018 - August 2018 (Summer Internship)

Experiment with cluster of cpu's and extraction of data - cpu temperature,memory used, number of requests and Predict if an instance is going to be hacked using Decision Trees and Random Forests with Nominal Encoding

Skills

- **Language** : Python,Ruby, c++
- **Technology**: AWS, Sidekiq, Redis, nginx, Jenkins, Docker, NumPy, Pandas, scikit-learn, OpenCV, Semaphoreci, Terraform
- **Frameworks**: Django, Flask, Rails, PyTorch, TF, Keras
- **DB**: PostgreSQL, Redshift, DynamoDB

Education

PSG College of Technology, Coimbatore — B-Tech IT (2015 - 2019)

- Graduated with First Class Honors and a **GPA of 8.66/10**

Additional Courses

- **NPTEL Machine learning course from IIT (6 - months)**: Elite Certificate in Machine learning
- **Basics of AI(1 semester)**: 9/10 GPA
- **Advanced Linear Algebra (1 semester)**: 8/10 GPA

Projects

Visual Speech Recognition

- Visual speech Recognition aims at transcribing lip movements into readable text. The system will convert an input video into transcripted text
- The technique uses viseme and phoneme matching, where visemes are particular lip moments and phonemes are corresponding sounds that can be converted into text. In recent years, there have been many advances in automatic speech reading system with the inclusion of audio and visual speech features to recognize words even under noisy conditions. Our model focuses mainly on the visual element, while a good system uses the visual segment as a support for the acoustic segment.
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Automated Segmentation of Breast Lesions using Deep Neural Network

- Semantic Segmentation of Mammographic Images to Identify Abnormal Lesions using CNN.
- We try to segment and to classify breast lesions from mammography images. To achieve segmentation and mask generation of breast lesions, we use the U-Net architecture . U-Nets train faster and require a lower number of training labeled images, since annotations are difficult. Convolutional networks are employed to classify the lesion from the U-Net output as either Benign or Malignant. Conv-nets are not only improving for whole-image classification, but also making progress on local tasks with structured output. These include advances in bounding box detection, part and key-point prediction and local correspondence.
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Extracting text from images with Tesseract OCR, OpenCV, and CNN

- A table detection, cell recognition and text extraction algorithm to convert tables in images to excel files
- The algorithm consists of three parts: the first is the table detection and cell recognition with Open CV, the second the thorough allocation of the cells to the proper row and column and the third part is the extraction of each allocated cell through Optical Character Recognition (OCR) with pytesseract along with passing data which could not be identified by OCR through a conventional CNN
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Modern Face Recognition with DeepLearning

- Face Recognition using Histogram of Oriented Gradients(HOG)
- Face recognition is done using HOG technique with an inclusion of a real time subject to evaluate the performance of the algorithm. The feature vectors generated by HOG descriptor are used to train Support Vector Machines (SVM) and results are verified against a given test input. The proposed method checks whether a test image in different pose and lighting conditions is matched correctly with trained images of the facial database. The results of the proposed approach will detect the faces in an image and recognise and say who they are
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Portfolio and List of all remaining Projects — Detail: View All Projects

Strengths

- Creative
- Dedicated
- Detail Oriented
- Effective communication

Language

- English
- Telugu
- Tamil