

# Rajesh Shanmugam

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## Professional Experience

### AR XT Labs

03/2021 – present

*ML Engineer*

Automating day-to-day activity of process teams, Which includes building software and models. Responsible for production deployments and Maintaining the same.

### PositiveNaick Analytics

10/2018 – 02/2021

*Data Analyst / Software Developer*

Chennai, India

Responsible for end to end data science pipelines which includes writing code, building models, and evaluating models. Being a part of the backend team focusing on Application Development (Primarily on ML, NLP, and CV).

## Skills

### Python

● ● ● ● ●

### Computer Vision

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*Image classification, Image Processing, Face detection, Object detection and Object tracking.*

### NLP

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### Database

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*Neo4j, MongoDB, SQL, PostgreSQL, Redshift*

### Machine Learning

● ● ● ● ●

### Software Development

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*GIT, Linux, Containers*

## Projects

### Chatbot Application

*Yekaliva*

Back end contributor, Wrote code, built ML models(Classification Model), and Knowledge graphs(Neo4j) for the rapid intent processing and retrieval. Exposure to NLP techniques and libraries.

### Data Virtualization

The primary objective is to Architect a Data warehouse and Exhibit the Data in a Hybrid model, Which is the combination of NLP and Data Visualizations. Responsible for the end to end pipeline, which consists of Requirement gathering, Data collection(S3), Data Engineering(AWS Glue, Redshift), Writing code(Web Application which was built purely on python), and the deployment(Docker) also responsible for Communicating with business users.

### Computer vision

The primary objective is to track persons from multiple cameras with a fast processing system due to real-world constraints, Pre-trained models are not used. It leads to the use of OpenCV extensively. This project also includes demographics identification(Neural Networks), object detection, and localization.

### Retail Analytics

*Analytics as a Service*

The objective is to segment the customers based on their Visiting and buying patterns(RFM Analysis) as Champions, At-Risk, and Needs Attention customers. It also includes identification of upselling and cross-sells items based on how those items contribute towards sales amount for a particular customer(Personalized recommendations).

## Side Projects and POCs

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### Simulation Trials

To validate and understand the ML models and Factors contributing to the prediction by visualizing(Streamlit) the prediction probabilities, Planning on extending this with more features like automating Data exploration, Model recommender, and Model evaluation.

### Semi Voice Process Automation

The objective is to Automate the semi voice process by replacing the Agent with an ML model. It comprises multiple modules includes listener, STT, Answering bot(Classification Model) and the TTS.

### STT Experiments

It has multiple objectives like keyword spotting in an Audio clip, Speaker diarisation, and Speech modification. Google STT API and Deepspeech model was used in this experiment.

### Table to Grpah

Graph recommendation system, Based on the type and Distribution of the data. With the Input data in CSV, data types are identified, and based on the types of data will be sliced and diced for Visualizations. Currently, it supports Univariate and Bivariate Analysis. Multivariate Analysis is under work in progress

### Data Summarizer

One of the modules of Table to Graph, Which identifies the data types, and also cleanse and normalize the data if required.

## Interests

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- Computer Vision
- Analytics as a Service
- Augment Reality
- Data Engineering
- Dev-Ops

## Education

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### DR.MGR University

B.Tech

2013 – 2017  
Chennai, India

## References

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**Rinaldo Rex**, *Head of Products Lab*, Zephony  
9500646400

**Damodharan Padmanaban**, *CEO*, PositiveNaick Analytics  
9884054677