

# PRIYANK THAKKAR

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## SUMMARY

A self-motivated Machine Learning Engineer with 3+ years of experience adept at developing and deploying production-ready models. Proficient in TensorFlow, PyTorch, and Keras, with a strong knowledge of cloud platforms like AWS and Docker. Passionate about leveraging ML for real-world problem-solving with skills in natural language processing, computer vision, and regression modeling.

## WORK EXPERIENCE

**SJSU Research Foundation | Machine Learning Engineer | California | Python, Docker, PyTorch, TensorFlow (Jan 2022 - May 2023)**

- Developed custom neural network models using TensorFlow to improve object detection accuracy by 15% over pre-trained models.
- Integrated the ZED Stereo Camera with ROS and Docker, reducing system latency by 20% for the algorithms to process sensor data from 2D Lidar, Teensy board, and IMU 6500 with a 98% accuracy rate in obstacle detection and avoidance.
- Implemented an algorithm that improved vehicle localization precision by 20% using 3D point clouds from a visual odometry stack, leading to a more accurate mapping in real time.
- Computed 12 different state-of-the-art models for Traffic Signs dataset and optimized the speed of these models' training by 12% using Intel's integration for computation. Optimized the speed of inference by 10x times with INT8 scales of TensorRT.

**Starlit Electronics | Machine Learning Engineer | India | SageMaker, PyTorch, AWS, Python, TensorFlow (Sep 2019 - Aug 2021)**

- Collaborated with cross-functional teams to design and execute a successful proof-of-concept (POC) for the home security product, saving 10% on the total POC budget while delivering all required functionalities within the desired timeline.
- Developed and integrated machine learning algorithms to enable motion following and human detection features in a home security product prototype, resulting in a 15% increase in accuracy compared to existing products on the market.
- Innovated and fine-tuned custom neural network architecture with a transfer learning approach, achieving a precision rate of 93% for people detection.
- Led development for Natural Language Processing (NLP) initiative with chatbots and virtual assistants for home security applications that worked on language understanding methods like a bag-of-words and TF-IDF.
- Used the AWS SageMaker and S3 to quickly build, train and deploy the models like YOLO, Regression, SVMs, and Decision Trees.
- Developed a predictive model for product sales using logistic regression, which accurately forecasted sales within 2% of actual figures, leading to increased profitability and better inventory management.
- Worked closely with and extended my support to the Tech Lead and the Project Manager to hire, train, and onboard two new team members.

## EDUCATION

M.S. Artificial Intelligence | San Jose State University | California | 3.7/4.0

**(Aug 2021- May 2023)**

B.E. Computer Science and Engineering | Gujarat Technological University | India | 3.7/ 4.0

**(Jun 2016 - May 2020)**

## SKILLS

**Programming Languages:** Python, R, Java, SQL, NodeJS, React.

**Frameworks:** TensorFlow, PyTorch, Keras, Pandas, NumPy, Scikit-learn, SciPy, NLTK, OpenCV, Matplotlib, Seaborn, Plotly, Spark.

**Deployment:** Kubernetes, Kubeflow, Amazon SageMaker, AWS, GCP, Docker Containerization, Streamlit.

**Knowledge:** Neural Networks, SVM, Regression, XGBoost, GBM, Clustering, Random Forest, Transformers, RNN, Attention mechanisms.

**Developer Tools:** MongoDB, BigQuery, CI/CD, Jenkins, JIRA, Agile, Git, Linux, Jupyter Notebook.

## ACADEMIC PROJECTS

**AI-based Exercise Tracking | NodeJS, React, MongoDB, Python, AWS, Nginx, MoveNet, Docker, CI/CD | <https://youtu.be/BzTgOrpj904>**

- Trained 5 different exercise models to perform Human Pose Estimation on the user's video input using MoveNet and TensorFlow.js.
- Tracked the exercise sessions of each user, and deployed a website on AWS EC2 using the Nginx server using CI/CD pipeline.

**Machine Learning Pipeline Orchestration | Python, Kubeflow, Kubernetes, TFX, GCP, TensorFlow, Docker**

- Built production-level Machine Learning infrastructure using TFX, Kubernetes, Kubeflow Pipelines, TensorFlow, and GCP to streamline the model training and deployment processes.

**Natural Language Processing (NLP) Q&A Application | BERT, Python, Streamlit, Haystack, Hugging Face, NLTK**

- Benchmarked 5 different BERT Q&A models from Hugging Face using a self-created dataset of 200 paragraphs and annotated 1000+ questions of SQuAD format using the haystack platform. Also performed OpenAI GPT model fine-tuning features.

**Regression Model for Energy Usage Intensity (EUI) | BigQuery, XGBoost, OneAPI, Python, Google Data Studio (GDS)**

- Analyzed tree-based regression models like CatBoost, LightGBM, and XGBoost to get the best results on 100K+ data points.
- Integrated BigQuery to project for performing live visualization dashboard of 76K data points utilizing Google Data Studio.