PRIYANK THAKKAR

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EDUCATION

M.S. Artificial Intelligence | San Jose State University | California | GPA: 3.7/4.0 **(Aug 2021- May 2023)**
Courses: Intelligent Autonomous Systems, AI & Data Engineering, Machine Learning, Deep Learning, Natural Language Processing (NLP).

B.E. Computer Science and Engineering | ITM University | India | GPA: 3.7/4.0 **(Jun 2016 - May 2020)**

SKILLS

Programming Languages/OS: Python, R, Java, C++, HTML, CSS, SQL, NodeJS, ReactJS, Ansible, Nginx, Linux, Windows, iOS.
Frameworks: TensorFlow, PyTorch, Keras, Pandas, NumPy, Scikit-learn, SciPy, NLTK, OpenCV, Matplotlib, Seaborn, Plotly.
Deployment: Kubernetes, Kubeflow, AWS, Docker Containerization, Flask, API, Streamlit, Google Data Studio, Data Version Control (DVC).
Models: BERT, Neural Network, SVM, Regression, XGBoost, GBM, Clustering, Random Forest, GPT, Transformers, RNN, Attention.
Others: MongoDB, SQLite, BigQuery, Google Data Studio, Tableau, ETL, CI/CD, Jenkins, JIRA, MoveNet, Pose-Estimation, NLP, GitHub.

PROFESSIONAL EXPERIENCE

SJSU Research Foundation |AI Graduate Research Assistant | California | Python, Docker, ROS, OpenCV **(Jan 2022 - Present)**

- Created a small autonomous vehicle by modifying the F1/10 car to provide mounting points for components like 2D Lidar, Teensy board, IMU 6500, and ZED stereo camera to behave 100% autonomously leveraging the Nvidia TX2 board.
- Prepared ZED Stereo Camera with ROS to perform object detection with depth visualization for auto navigation using Docker.
- Executed a 3-dimension map of surroundings to enhance the average precision of vehicle's localization and mapping in real-time, to estimate the distance traveled by car utilizing 3D point clouds of visual odometry stack.

Starlit Electronics | AI/ML Engineer | India | Kubernetes, Docker, AWS, Python, Jenkins, OpenCV **(Feb 2020 - Aug 2021)**

- Worked under the proprietor of the startup responsible for creating various proofs-of-concept(POC) of thief/intrusion detection, and monitoring of home using RPi Camera in the fields of IoT, home security, medium-scale hardware, and software solutions.
- built a prototype of a home security product with functionalities like motion following, weapon detection, and real-time alerts with ChatBot on a third-party messaging app like Telegram with NLP features by saving 10% on the total POC budget.
- Automated CI/CD pipeline for NodeJS web application on Jenkins with GitHub integration to deploy it in Kubernetes pods in Kubernetes cluster on AWS EC2 with replication, auto-healing, and auto-scaling features.
- Managed a network of 3+ Unix servers breaking a monolith application into microservices and saving lead time by 20% for a system designed to handle database, server, and orchestration using Docker containers and Ansible.
- Implemented live and clear streaming camera at 60 fps while intrusion detection, also reduced the latency time by 6 milliseconds.
- Benchmarked 5 different deep-learning open-source algorithms to detect various weapons from the top view and side view images.

ACADEMIC PROJECTS

Classification Models for Autonomous Cars | Python, Roboflow, PyTorch, Neural Networks **| https://tiny.one/obj2d**

- Annotated 1000 images operating Roboflow annotation software with 3000 objects of roadside objects like cars, trucks, cycles, bus.
- Compared 3 models Detectron2, YOLOv5, and ScaledYOLOv4 on an augmented dataset to check the models' performance.

Inference Acceleration of Traffic Sign Dataset with TensorRT | TensorFlow, PyTorch, Python, TensorRT **| https://tiny.one/TensorRT**

- Computed 12 different state-of-the-art models from TensorFlow and PyTorch model zoo and optimized the speed of these models' training by 12% using Intel's integration for computation.
- Increased the speed of inference by 10 times with INT8 scales of TensorRT with a result of 1431 Images/Secs and converted the trained model into TensorFlow Lite quantiles to deploy it into future mobile and software applications.

Natural Language Processing (NLP) Q&A Application | BERT, Python, Streamlit, Haystack, Hugging Face **| https://tinyurl.com/nlpqa1**

- Benchmarked 5 different BERT Q&A models from Hugging Face using a self-created dataset of 200 paragraphs of various geological facts and annotated 1000+ questions of SQuAD format using the haystack platform.
- Deployed a web-based NLP application of factual Q&A, with a model accuracy of 82% utilizing the tool Streamlit for easy grading.

Regression Model for Energy Usage Intensity (EUI) | BigQuery, XGBoost, OneAPI, Python, GDS **| https://tiny.one/ML101**

- Analyzed tree-based regression models like CatBoost, LightGBM, and XGBoost using Scikit-learn to get the best results on 100K+ tabular data points after performing ETL.
- Integrated BigQuery to project for performing live visualization dashboard of 76K data points utilizing Google Data Studio (GDS).
- Optimized training time for Random Forest Regression by 50% with only a 0.1% reduction in accuracy with Intel's OneAPI library.