Chintan Patel

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WORK EXPERIENCE

Computer Vision Engineer | Wobot Intelligence | Delhi, India **May 2017 – Present**

- Notably contributed to building, and fine tuning of DL models to track anomalies in standard operating procedures (SOPs).
- Delivered E2E dockerized pipelines, using flexible and high-performance serving system like TF-Servings, OpenVINO-Servings.
- Contributed to the development of Wobot Toolkit - a Generalized Model Training and Dataset Management/Annotation toolkit.
- Collated and curated data from multiple data sources for Image tagging.
- Carried out manual, functional, performance and scalability testing on features relying on multiple AWS services and DL prediction models by brainstorming over all possible client scenarios.

Python Developer | Innoventaa Technocrafts | Ahmedabad, India **Jun 2016 – May 2017**

- Spearheaded a group of associates in building varied real world AI use cases and applications of major industries.
- Scoped out improvement opportunities by constructing reusable framework using MVC design pattern leading to faster product prototyping and designed database schemas with complex entity relationships.
- Performed data wrangling and statistical analysis on huge amount of data using numpy, pandas for exploration and modeling.

TECHNICAL SKILLS

Programming Languages and Operating Systems: Python, Java, Bash, SQL, HTML, CSS3, Windows, Linux
Frameworks and libraries: Numpy, Pandas, Scikit-Learn, Keras, Tensorflow, Flask, Tableau, OpenCV, NGINX, REST API, JSON
Tools and Services: Git, AWS, Azure, Google Cloud, Docker, Zoho Sprints, Excel, Jupyter Lab, Anaconda, PyCharm, Visual Studio
Algorithms/ Models: Regression, Decision Trees, Random Forest, SVM, KNN, CNN, LSTM, RetinaNET, YOLO, VGG-16 and VGG-19, EfficientDet, EfficientNet, Faster RCNN, C3D, I3D.

PROJECTS

Covid-19 Compliance Automation:

- Used the existing CCTV infrastructure to monitor social distance monitoring between individuals, wearing face masks while at work, washing hands for at least 20 secs and detect violations which trigger real time notifications to the concerned executives.

AI-powered Hygiene Video Analytics:

- Implemented DL model architecture to detect non-adherence to PPE like hairnet, gloves, aprons, uniforms and regular tracking of premise cleaning/sanitation activities leading to a 50% increase in positive sentiment on Twitter as a result of noticeable improvement in their hygiene level.
- Consumption of these predictive alerts was enabled through dashboards.
- Developed cutting edge solutions get actionable monitoring data using Tools: Intel's OpenVINO, UP Squared AI Vision X Developer Kit for optimized inference using FP16, FP32 and INT8 precision models; NVIDIA's - NVIDIA Jetson Nano Developer Kit, Transfer Learning Toolkit (TLT), TensorRT, DeepStream and Gstreamer decreasing the processing time by 30%.

Safety Compliance on Construction Sites:

- Automated the monitoring of people wearing hardhat and safety vest on the construction sites and delivered in real-time as notifications on Wobot app, WhatsApp or e-mail to specified stakeholders.

Retail Video Analysis:

- Enhanced customer experience by gaining insights on metrics like average queue length, queue abandonment rate of their stores, customer wait time and walk-in count. Thus, increasing customer satisfaction, increased sales and profits.
- Engineered a predictive model using color extraction as a uniform classifier and KLT-SORT to track availability of staff presence at billing counter and around customers.
- Leveraged AWS services to devise age range, emotions, gender, and provided data visualizations in the form of graphs and charts.

Workplace SOPs and Corporate Security Video Analysis:

- Built deep learning-based object detection models to detect unauthorized person in the areas of operations, unauthorized personnel near-critical machinery, Intrusion, monitor perimeter. Also, monitor store operations such as uniform detection, stored open and close timings, and maintain staff attendance.
- Significantly contributed in Automatic Number Plate Recognition as a part of POC to support manufacturing workplace SOP's.
- Ensured adherence to company standards and process compliance by generating reports.

Wobot Utilities:

- Implemented dataflows for data augmentation and generalized model training utility
- Created a Wobot ticketing REST API to view notifications and analyzed reports on a web-based central dashboard that keeps track of all organizational data on any compliance in one place.

EDUCATION

Bachelor of Engineering in Information Technology | **LD College of Engineering** | August 2012 - May 2016 **CGPA 7.12/10**
Coursework: Operating Systems, Machine Learning, Database Management System, Data Structures, and Deep Learning.