Ishan

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SUMMARY

Focused recent Graduate with a Master of Science (M.S.) in Computer Science with a strong emphasis on machine learning, artificial intelligence, and computer vision. Seeking a new opportunity with a view to delivering end-to-end solutions involving the latest enterprise technologies and industry best practices. An excellent analytical skill and an innate ability to solve complex problems.

EDUCATION

Master of Computer Science May 2019 - May 2021
University of Dayton, Dayton, Ohio **GPA - *3.93/4.00***
Bachelor of Electronics and Telecommunications May 2015 – June 2019
University of Pune (SPPU), Pune, India **GPA - *3.60/4.00***

SKILLS

Programming Languages: GO, Java, Python, HTML, JavaScript
Python Lib: TensorFlow, NumPy, Flask, NLTK, Matplotlib, Seaborn, OpenCV, SciPy, Pandas, Matplotlib
Cloud Technologies/Libraries: Amazon Web Services(AWS), Hadoop
Software and Tools: Docker, Kubernetes, Jenkins, Git, Docker, Eclipse, PyCharm, Anaconda, MATLAB, NetBeans, Visual Studio, Jupyter Notebooks

EXPERIENCE

TOYOTA CONNECTED **Plano, Texas**
Golang Developer *August 2021*

- Added features to improve the application written in Go Lang.
- Wrote Python/Shell scripts to automate tasks.
- Designed unit tests that provide 100% coverage of code.
- Build and deployed docker containers to break monolithic apps into microservices, scaled microservices using Kubernetes.
- Tech Stack - Golang, Python, Datadog, SonarQube, AWS, Microservices(gRPC)

University of Dayton **Dayton, Ohio**
Graduate Research Assistant *August 2020 –May 2021*

- Working with a team of researchers in the design, development, testing, and deployment of end-to-end machine learning models. Using **Transfer Learning** and **Object Recognition** for construction safety of workers in real time on **Google Collab**
- Cleaning and annotating 5000 camera-trap images using annotation tools with semi-supervised generative modeling. Deployed on the cloud platform and used **Amazon Web Services (AWS)** including EC2,VPC to share and manage data and tool among the group members and used **GIT**.
- Handling "**Black-Box**" problem using different Visualization Techniques to generate heatmaps as **GradCAM** and **LRP**

ACADEMIC PROJECTS

Anomaly Detection at the construction site (***Python, TensorFlow, Classification, Tensor Board, XAI***) **Oct 2020-May 2021**

- Built Deep learning model for classifying workers as safe and unsafe based on the scenarios and safety equipment as hardhat & strap.
- The findings provide a new understanding of the capability of deep learning models whether a worker is safe or not considering different working contexts without explicit rule-based pre- or post-processing (without complex rule-based settings) of image data.

- Experimental results with best model accuracy of 93% from five different CNN models (VGG-16, ResNet-18, ResNet-50, Inception) used in experiments to validate. Explored Explainable artificial intelligence (XAI) techniques to successfully localize safety equipment.

Road Crack Detection ***(Python, TensorFlow, Semantic Segmentation, Convolutional neural network)*** **Aug 2020-Oct 2020**

- Provided solution to the problem segmentation using supervised machine learning (ML) based method for the identification and classification of a differently cracked road pavement based on vibro-acoustic signature using real world dataset
- Explored several Segmentation Model and implemented using Keras functional API to detect cracks on road with 97.5% acc
- Experimental findings show that UNet obtains greater results than modern techniques and shows efficiency

Best Deal: Online Shopping Web Application (*Java, Python, JavaScript, MySQL, MongoDB*) **Feb 2020 – April 2020**

- Built a E-Commerce Web app to shop electronic goods and REST APIs for authentication and updating database
- Exhibited product-related Top 10 comments, news, tweets leveraging Twitter API
- Built a Machine Learning model using SVD Algorithm and product reviews data stored in MongoDB to recommend products

Suggestive Learning ***(Python, Flask, PostgreSQL, Linear Regression, Jupyter Notebooks)*** **Jan 2020–May 2020**

- Created Web Application using http request which provide suggestions to a person to opt for a traditional(classroom) classes or an online (e-learning) classes by using Keras trained model deployed to flask web service
- It uses the offline data gathered physically from previous experience of people via survey and stored into PostgreSQL
- Used python as the backend language and used Keras (tensor flow) to create network to get the desired output for the end user. Developed pipelines to automatically fetch batches of data and labels

Database Management System Project ***(JAVA 8, MySQL, ER Diagram, SQL query)*** **Sep 2019-Dec 2019**

- The project is based on a website login with booking available for flight and hotel. Created database for storing the user's information and web interface is created in java spring MVC
- Developed a social networking website. Stored, manipulated, and retrieved data of the users using MySQL

Movie Web Page*(GO Lang, REST API, Docker, Kubernetes, Mongo DB)* **Sep 2019-Dec 2019**

- Created web application using REST API written in GO(Gin) for the communication with the API gateway providing movie service as get movie, add review, and view review
- Using Mongo DB for the data storage. Created Docker images and uploaded in the Docker hub repository and deployed in container

PUBLICATION & CERTIFICATION

- "Explainable DL for Construction site safety" presented at the University of Dayton Joseph W. Stander Symposium 2021
- Publishing research paper named "Anomaly Detection at the construction site" for the journal "Automation in Construction"
- Data Science and Autonomous Systems, University of Dayton, Dayton, OH May 2021