

# Videet Nimsarkar

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## Education

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**Indian Institute of Technology, Kharagpur**

July 2016 – May 2021

*Dual Degree in Industrial Systems Engineering and Management*

*B.tech + M.tech*

## Experience

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**Valeo** | *Senior Software Engineer*

June 2023 - Present

- Led the development of a **LIDAR** perception system for Advanced Driver Assistance Systems (ADAS) applications
- Utilized GSAM (Grounded Segment Anything) as the foundational model for preannotation of raw point-cloud data
- Designed & implemented an end-to-end **CI/CD** pipeline on GCP **Vertex AI** for multitask training of 2D/3D point-cloud
- Architected a custom VLPS Network (**Valeo Lidar Point-Cloud Segmentation**), resulting in a patented architecture
- Achieved real-time inference speed of 13.5ms in TI Board through the implementation of a 30% Pruned Network Architecture, maintaining a precision rate of 90% across all the categories

**AgNext Technologies** | *Machine Learning Engineer*

September 2021 – May 2023

- Worked on project to provide a fast, objective, and consistent digital quality assessment of grains, which is important for ensuring their safety, nutritional value, processing characteristics for both consumers and producers
- Developed CNN models using **segmentation**, **classification**, and **object detection** techniques for accurate identification, quantification, and feature localization of food grains, oil seeds, and spices
- Developed process to calculate sample **weight** from images, streamlining analysis by eliminating physical weighing
- Developed **Airflow** pipeline for data acquisition, preparation, training & deployment utilizing **MLflow** for model tracking

**ListenAI** | *Founding Member*

March 2021 – September 2021

- ListenAI is Conversational AI platform helps agents to increase performance with automated speech recognition.
- ListenAI analysis behaviour changes, emotion identification whether being voice, text or video deliver scalable solution
- Used HMM, Neural network, Transformer, to make cluster of similar voices and extracted audio features for training
- Led a team of 5 members to develop ListenAI, recognised market growth 54% in first 4 month by partnering with 3 firms

## Internship

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**Landryt** | *Artificial Intelligence Intern*

April 2020 – June 2020

- Worked on a project that built field extraction model for user's legal documents & personal IDs in the field of real estate
- Built a **custom NER** model using python with the help of spacy to correctly identify the Google OCR extracted fields
- Developed an image classifier using **VGG16** to classify the images into 6 different categories with an accuracy of 97%

**AppInSource** | *Artificial Intelligence Intern*

May 2019 – July 2019

- Extractive text summarization of documents with **TextRank** which generated summary with 95% accurate sentence
- Implemented **Seq2Seq attention** to capture the long term dependencies in long document for abstractive summarization
- Experimented with **pointer-generator** network, Coverage Mechanism and Actor-Critic (RL) for Sequence Prediction
- Achieved Maximum **41% Rouge-1** score on 31GB corpus of CNN/DailyMail dataset using Pointer-generator network

**Indian Institute of Management Nagpur** | *Research Intern*

May 2018 – June 2018

- Predicted behaviour of post & its impact on stock price movement & their influence of word generating values over prices
- Built unsupervised algorithm to identify sentiments used guided LDA, NRC, Loughran McDonald score on reddit posts
- Identify words create more engagement, topic modelling & effect of tickers on stocks with 91.4% accuracy for helpful post

## Projects

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**Master's Thesis Project: Visual Saliency** | *Dr. B G Menon*

September 2020 - March 2021

- Implemented a **SALGAN** network in keras using custom loss function and fed it with SALICON dataset
- Real time iris data using **Eye tracker** was collected while driving for different kinds of drivers
- Trained SALGAN and SALNET creating a saliency map identifying the areas to focus while driving

**Bachelor's Thesis Project : Smart Safety Jacket for Miners** | *Prof. J Maiti*

September 2019 - March 2020

- Built a **sensor-embedded IoT** based Smart Personal Protective Jacket for the safety of mine workers
- The equipment used a GPS Module and Pulse Sensor to track the real time location of workers in case of an injury
- A real time alert system was incorporated using DHT22 (Temperature-Humidity sensor) and MQ5 (Gas sensor) during hazardous situations

## Technical Skills

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**Languages:** C/C++, Python, SQL, IBM CPLEX, Arena, Solidworks, Adobe Photoshop

**Cloud Platform:** AWS, Google Cloud Platform, Vertex AI

**Libraries:** Keras, Tensorflow, Pytorch, OpenCV, Scikit-learn, Scikit-image, WEKA

**Areas:** Natural Language Processing, Computer Vision, Algorithms, Machine Learning, Deep Learning