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Vishwak Senan Ganesan

PostGrad Student / Software Engineer

Find me @: vishwak.me
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Education

Master of Science in Data Analytics, *University of Warwick* October 2021 - Present

1. A member of student representative.
2. Climate Hack Data Science Competition participation with rank of Warwick's 7th and Overall 50th.

Bachelor of Engineering in Computer Science, *Anna University* August 2016 - September 2020

1. A peer review publication at Springer.
2. Smart India Hackathon competition finalist in 2017 and 2018 edition.

Skills

Languages	Python, C, C++, Java, HTML, CSS, Javascript, PHP.
Libraries & Frameworks	Tensorflow, PyTorch, Scikit-Learn, Pandas, OpenCV, Django, Kubeflow, PySpark.
Software Practices	Data Structures, Design Concepts, OOPS, Test Driven Development, DevOps, MLOps, Agile.
Database	MySQL, PostgreSQL, MongoDB, Data Processing Pipelines, Hadoop.
Deployment & Tools	Git, Docker, Kubernetes, MicroServices, API, Apache Sparks, Airflow.

Experiences

BACKEND ENGINEER **Sept 2022 — Present**
Beakbook *London, United Kingdom*

- Solely handled the company's IoT backend infrastructure.
- Successfully deployed 90+ resources on AWS using Terraform for highly scalable, secure and cost saving infrastructure.
- Building the workspace and seperating production and sandbox deployment for the company to try their new algorithm.

MACHINE LEARNING ENGINEER INTERN **June 2022 — July 2022**
Telescope Analytics *London, United Kingdom*

- Major Responsibility to work on the back-end systems of the Telescope analytics.
- Build 15 slack event emission trigger messages from front-end and backend systems.
- Also build the Pipeline from recommendation system pipeline - data preparation - for collaborative filtering.

SOFTWARE ENGINEER **September 2020 — September 2021**
Z2i Solutions Private Limited *Chennai, India*

- Worked majorly as a Backend Engineer on the framework Odoo.
- Built and designed faster Data Retrieval systems by 15% in PostgreSQL by changing schema style from Star to Snowflake .
- Python as the programming language with SQL Database. Collaborating with the team was the key to make thoughtful and quick decisions

COMPUTER VISION ENGINEERING INTERN **December 2018 — January 2019**
Edge Technologies *Chennai, India*

- Worked on Computer Vision algorithms to find fault in manufactured automobile parts.
- Successfully Deployed a sticker bubble detection model using Docker.
- Python is the programming language used along packages such as OpenCV, Flask

Achievements

CLIMATE HACK COMPETITION
Inter-University US & UK Data Science Competition *United Kingdom*

- The competition is to use Deep Learning to forecast the weather for next 2 hours when given data for the 1 hour (5 minute interval). Image data is given to all competitors and we have to come up with a solution that is better than state-of-the-art for current forecasting (optical flow).
- This is my first data science competition and finished it by having a score of 0.68914 as Warwick's 7th and overall 50th.
- Click here for the leaderboard access (username: vishwaksenang) and Click here for code access.

SMART INDIA HACKATHON 2018
India's National Level Hackathon 2018 edition *India*

- This is a hackathon organised by Government of India and I am proud to say that my team was the finalist for this edition.
- There were so many problem statement to solve but I choose to solve the problem state of Bridgestone to detect manufacturing fault in tyres. My team was able to solve 5 problem in the given 36 hour window and deploy the model. I was responsible for building the model to detect the type of defect that each tyre has after manufacturing.
- Click here for code access.

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Projects/Publications

A NOVEL ALGORITHM FOR AUTOMATIC ESSAY GRADING USING NLP TECHNIQUES

Springer Publications - IVCI 4.0 2020

- This is a peer reviewed paper published in springer and it was part of my final year project during my under grad.
- This paper is about using statistical and deep learning models on finding similarities between two paragraphs or sentences. Techniques of topic modelling and topic relevancy is used.
- Click here to access my paper.

AUTOMOBILE TYRE DEFECT DETECTION

A Computer Vision project to detect faults after the manufacturing of tyres

- The web application can be used as the interface to start the machine learning algorithm to detect faults in a given tyre. The input can be of the form of image, video or a live camera.
- This application can solve 7 different defect after the manufacturing of tyre like tyre defamation, irregular paint in tyres and much more. This project was done on behalf of the company Bridgestone.
- Click here to access the code.

EYES FOR THE DATA

An Innovative Django Web Application which makes data visualization and engineering easier.

- The web application can be used as the admin/ audit page as it provides many options to handle and visualize the data.
- This makes the data engineering/ feature engineering task easy as we can easily visualize and understand the data for model training purposes. This can also comes handy when there is a heavy data imbalance.
- Click here to access the code.

TEXT ANNOTATION TOOL

A React Web Application

- This web application is one of the unique product which helps data scientist to annotate the sentiment of the text and prepare their dataset for model training.
- The data flow is that the application will accept a CSV file as input and looks for the text column and it will iterate through each row in the text column and create a new column sentiment (Good, Neutral, Bad) depending upon what the user wants.
- Click here to access the code for this project.

CARDS DETECTION API

Detecting all playing cards using Computer Vision Techniques

- This project uses Vision Techniques such as Template Machine and Feature detection algorithm SIFT to detect the shape and number of the card.
- Used Python with packages such as OpenCV and NumPy.
- Click here to access the code.

SENTIMENT ANALYSIS

A basic RNN + CNN layer to do sentiment analysis of the text

- This project aims to do basic sentiment detection for the given text using Keras API.
- The model is trained on twitter sentiment data with the train/valid/test split of 70-15-15. I was able to achieve 83% accuracy on the test set.
- Click here to access the code.