+44(0)7825768424
Coventry, United Kingdom
vishwaksenang@gmail.com

Vishwak Senan Ganesan

Backend Engineer

Find me @: vishwak.me
github.com/vishwaksenan
linkedin.com/in/vishwaksenan

Experiences

PLATFORM ENGINEER **Sept 2023 — Present**
Lloyds Banking Group *London, United Kingdom*

- Working inside Bank's Machine Learning Platform to help scale and secure customer and bank's data and machine learning model using python, terraform and GCP products.
- Successfully resolved a critical vulnerability in the platform within a day within 24 hours for platform to be 100% FCA complaint by updating user's access level and implement new security groups.
- Designed and developed the CI/CD systems using GCP Cloud Build and Jenkins which can scale up to 3000 deployments concurrently with complete security scanning (truffle-hog and aqua scan).
- Successfully led a project with a team of 3 members by upgrading (adding MS Team's Channel web-hook) the monitoring/alerting infrastructure in GCP and completed the project 40% ahead of deadline.

BACKEND ENGINEER **Sept 2022 — Sept 2023**
Beakbook *London, United Kingdom*

- Solely handled the company's ML algorithm and IoT backend infrastructure in AWS.
- Successfully deployed 90+ resources on AWS using Terraform for highly scalable, secure and cost saving infrastructure.
- Developed and Deployed the company's anomaly detection model which generated 50% of company's revenue.
- Building the workspace and separating production and sandbox deployment for the company to try their new algorithm.

MACHINE LEARNING ENGINEER - INTERNSHIP **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 recommendation system pipeline - data preparation - for collaborative filtering using AWS Sagemake Pipeline.

Skills

Languages	Python, Go, Dart, C, C++, Javascript, TypeScript
Technologies	Kubernetes, Istio Service Mesh, Cassandra DB, Kafka, Tensorflow, PyTorch, Django
Software Practices	Data Structures, Design Concepts, Test Driven Development, DevOps, MLOps, Agile.
Database	MySQL, PostgreSQL, MongoDB, Data Processing Pipelines, Hadoop.
Deployment & Tools	Git, Docker, MicroServices, API, Apache Sparks, Airflow.

Achievements

KUBERNETES CERTIFICATION
CERTIFIED KUBERNETES ADMINISTRATOR (CKA)

- Certified Kubernetes Administrator certifcation has hands-on labs and the exam in terminal based exam by CNCF. I have to solve real life kubernetes problems and solve it by using CLI commands given in the terminal.
- CERTIFICATION CREDENTIALS: LF-uw2g9tkl5s AND CLICK HERE to view my certification.

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.

Education

Master of Science in Data Analytics, *University of Warwick* **October 2021 - November 2022**

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.

+44(0)7825768424
Coventry, United Kingdom
vishwaksenang@gmail.com

Vishwak Senan Ganesan

Backend Engineer

Find me @: vishwak.me
github.com/vishwaksenan
linkedin.com/in/vishwaksenan

Projects/Publications

TERRAFORM IOT/ML INFRASTRUCTURE

Infrastructure as Code in Terraform for AWS Cloud

- Terraform code completely build IoT backend infrastructure for IoT Device registration and Maintenance using AWS IoT Core.
- AWS Batch Job to run the ML model on the data collected using the IoT device like ESP32. Terraform uses 10+ AWS services like AWS EC2, Lambda, SageMaker, SAM, VPC and 90+ Terraform resources. This makes sure that the DevOps are setup properly for future development.
- **CLICK HERE** to access the code.

CFD AAPPLICATION

Fluid Dynamics Application (Karman) using MPI in C++

- Computation Fluid Dynamics mini application which is made faster using Message Passing Interfacing in C++. This is done for University of Warwick.
- 2-Diminesional Decomposition on the grid to make the computation faster with Ghost Cells/Halos for communication between grid. Parallelism made the application 20% faster compared to excuting in single thread.
- **CLICK HERE** to access the code.

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.