

# Aishwarya Anilkumar

Raleigh, NC, USA | aishwarya.anilkumar@outlook.com | +1 (321) 310-7785  
www.linkedin.com/in/aishwarya-anilkumar | www.github.com/codencaffeine

## BIOGRAPHY

---

Aspiring candidate with experience in building, training, tuning, and deploying machine learning (ML) and deep learning algorithms; Solid understanding of ML libraries and tools like TensorFlow, PyTorch, and Amazon Web Services (AWS) through relevant projects and certifications. A rich background in Cloud/DevOps and as a calibration engineer, now open to career opportunities in s/w development ML and related domains.

## EDUCATION

---

<b>Florida Institute of Technology</b> <i>M.S. in Computer Engineering (GPA: 3.9/4.0)</i>	Melbourne, FL Jan. 2021 – Dec. 2022
<b>University of Mumbai</b> <i>Bachelors in Electronics Engineering (GPA: 3.2/4.0)</i>	Mumbai, India Aug. 2010 – May 2014

## PROJECT EXPERIENCE

---

<b>StableSAM Generative AI on images (using HuggingFace)</b> ◦ Implemented using segment-anything by Meta and diffusers by HuggingFace to generate altered images using prompts in an APP	Apr.2023
<b>Diffusion model using the DDPM algorithm for sampling (using PyTorch)</b> ◦ Designed, trained the UNET based diffusion model for predicting noise and context based images using the DDPM sampling algorithm for better quality images.	May. 2023
<b>Detection of DeepFakes in Images (using TensorFlow)</b> ◦ Used pre-trained models for transfer learning and implemented a detection model for DeepFakes.	Mar. 2023
<b>Deep Convolutional Generative Adversarial Network (using Torch)</b> ◦ Built and trained a DCGAN to generate fake images of famous people after being trained on real celebrity images.	Feb. 2023
<b>Character Level GPT on Shakespeare Data-set (From scratch)</b> ◦ Built and trained a Generatively Pre-trained Transformer for text prediction at character level using PyTorch, similar to the core of chatGPT.	Jan. 2023
<b>Camera calibration and algorithm development in computer vision</b> ◦ Built a system for multiple camera calibration, clustering, segmentation and applying PCA (principal component analysis) to identify the orientation of linear springs of automobiles in an industrial setting from a point cloud.	Dec. 2022
<b>Recent projects (using Tensorflow)</b> ◦ Sentiment Analysis using LSTMs and GRUs   Time series forecast using LSTMs and CNNs   NLP modeling for text prediction using LSTMs and CNNs   Text prediction using Transformers.	Sept. 2022
<b>Cost minimization of animated geometric models in computer vision</b> ◦ Particle motion path planning in a 3D setting using VPython.	Apr. 2022
<b>Deep Reinforcement learning on OpenAI Gym (using Tensorflow)</b> ◦ Implemented end-to-end reinforcement learning with a deep neural network to train the DQN agent. ◦ Tested on OpenAI Atari games and LunarLander v2.	Sept.2021

## CERTIFICATIONS

---

<b>AWS Machine Learning Speciality</b> – Issuer: Amazon Web Services (AWS) Expertise in developing, designing, and running ML or deep learning workloads in AWS Cloud. Solid understanding of best ML operational practises on the cloud, best optimization techniques, and expertise in AWS machine learning services, such as Amazon SageMaker, Amazon Rekognition, Amazon Comprehend, Amazon Translate, Amazon Forecast, and Amazon Personalize.	Dec. 2022 - Dec 2025
<b>TensorFlow Developer Certificate</b> – Issuer: TensorFlow Convolutional Neural Networks   Natural Language Processing   Sequences, Time series and prediction	Oct. 2022 - Oct. 2025
<b>AWS Cloud Practitioner</b> – Issuer: Amazon Web Services (AWS) Knowledge of core AWS services and use cases, Kinesis, EC2, SageMaker, DynamoDB, EKS, ECS, etc.	Nov. 2022 - Nov. 2025

## TECHNICAL SKILLS

---

**Languages and Tools:** Linux, C++, Python, SQL, PostgreSQL, Git, AWS, Docker, Kubernetes, VSCode, PySpark, Azure, Jenkins, Power Shell, GitHub, YAML, JSON, AWS Code Commit, Apache, Ubuntu, Windows, MacOS, Terraform, Splunk.

**Libraries:** OpenAI-APIs, LangChain, TensorFlow, Keras, PyTorch, Scikit-Learn, SciPy, OpenAI Gym, OpenCV, Pandas, Numpy, VPython

**Key Skills:** Token reduction Tools/APIs for LLMs to reduce billing costs, ChatGPT API, LangChain, GPT, Big Data, MLOPs, Apache Spark, Deep Learning, NLP, LSTMs, RNNs, Transformers, MidJourney

## WORK EXPERIENCE

---

**Florida Institute of Technology – Student Researcher** (Melbourne, FL) *Jun. 2022 - Dec 2022*

- o Collaborated with 2 research candidates in developing Automatic Speech Recognition (ASR) system using traditional machine learning algorithms and a separate model with a Deep Learning module as the back-end for Sase Lab and Kaldi. The Deep learning model was able to detect the trigger word with 100% accuracy. This is an industrial project for the NLP library Kaldi, which required an implementation from scratch, from raw audio pre-processing, FIR filtering, feature extractions, MFCCs, LPCs, Discrete Fourier transforms, to SVMs, followed by prediction modeling.
- o Implementing using Wake-up-word recognition for detecting a new trigger word for the ASR system with effective detection and identification between alerting and non-alerting contexts of the same chosen word, under the guidance of Dr. Veton Kepuska

**Brainrgic – Software Developer - Computer Vision** (Thane, India) *Oct. 2019 - Oct. 2020*

- o Successfully implemented a Visual Perception Stack for a Japanese automobile client with the help of Carla simulator and Real-world data from various sensors.
- o The project involved visual Odometry for the ego vehicle localization by detection and descriptions of static and dynamic obstacles and estimating their distance from the ego vehicle.
- o SIFT descriptor was used for initial feature extraction paired with FAST detectors and FLANN for the feature matching process. Camera motion estimation was achieved using RANSAC. The deep learning stack was then deployed using semantic segmentation and then trained on real-data from cameras, LIDARs and other sensors.

**Brainrgic – Software Developer - DevOps** (Thane, India) *Apr. 2017 - Oct 2019*

- o Successfully optimized and streamlined Amazon AWS services such as EC2, S3, VPC, IAM, Load Balancer and Cloud Watch through innovative Autoscaling techniques, leading to 11% cost reduction.
- o Expertise in Amazon Web Services like EC2, Load balancers, Lambda, S3, RDS, DynamoDB, Aurora, SQL, VPC, Route 53, IAM, WAF, CloudFormation, Elastic Kubernetes services (EKS), Elastic container services(ECS), Kinesis, EBS, Elastic Beanstalk, CloudWatch, CloudTrail, Security groups, SNS, SQS, Direct connect etc.
- o Utilizing GitHub for advanced source code version control, integrated with Jenkins for CI/CD pipeline, code quality tracking, and expert user management with build tools Maven, for a truly optimized and efficient workflow.
- o Leveraging cutting-edge technologies such as Jenkins, Docker, expertly developed scripts for build, deployment, maintenance, and related tasks to ensure smooth and efficient operations.
- o Provisioned AWS App Mesh to implement network traffic controls on EC2 instances, ECS, EKS, AWS Fargate. In addition, I integrated a monitoring tool, CloudWatch, to automatically export data to Splunk.
- o Migrated existing AWS infrastructure to Serverless Architecture (AWS Lambda) deployed via Terraform and Implemented AWS Lambda functions to run scripts in response to CloudWatch events.

**Mass Weigh systems Pvt. Ltd. – Calibration Engineer** (Thane, India) *Feb. 2016 - Feb. 2017*

- o Calibration of high precision and accuracy systems in an NABL accredited laboratory to minimise the reducible errors.

**Monetium Educare HR Consultants LLP – Business development executive** (Thane, India) *Jan. 2015 - Jan. 2016*