

PROFESSIONAL SUMMARY

I am an expert Machine Learning Engineer/Artificial Intelligence Developer. I have been working on multiple real-world Deep learning projects and product development in industry. I also have deployed Deep learning/Machine learning models on the cloud environment as well as flask API. I have a great deal of experience in deep learning for Computer Vision. My expertise is in image/video classification, object detection/ tracking from image & videos, Image segmentation, Human activity detection, Anomaly Detection, Synthetic image generation, High resolution image generation.

EXPERIENCE

📌 Senior Artificial Intelligence Engineer

CINTIQS, Ottawa, Ontario, Jan 2022 - Sep 2022

► I have been working on AI Innovation projects to build the whole pipeline of AI software for the military, defense industry.

📌 Senior Machine Vision Specialist

Neatco Eng service, Kitchener, Ontario, Oct 2021 - Feb 2022

► Worked on industrial automation, robot vision. I have worked on training and deployment of Object detection model for core products.

📌 Artificial Intelligence Developer

Intelense, Markham, Ontario, Jun 2020 - Sep 2021

- I have worked to build the whole pipeline of different ongoing projects
- I have programmed building real-time video analytics for public safety applications like anomaly detection(GAN,,WGAN, VAE), accident detection, Fall detection(pose estimation), Fight detection, Fire and smoke detection, etc
- Using real-time camera feed(RTSP, HTTP), I have integrated AI solution for public safety using Deep learning, computer vision in development platform
- I have also Improved and corrected existing software and system applications, programmed applications and tools using object-oriented languages
- I have accomplished research and development of new equipment, products and processes
- Reviewed literature to remain current with new procedures and apply learnings to related research
- Recommended improvements to facilitate team and project workflow.

📌 Machine Learning Developer

Polaris Transport, Toronto, Ontario, Aug 2018 - Nov 2018

- I have worked on classification of customer email in work fusion automation process, other relevant machine learning task
- Technology used: Machine learning, Java, work fusion automation, sql, tableau reporting, mysql databases, AWS.

📌 Data Analyst

Dutch Bangla Bank Ltd, Dhaka, Bangladesh, Jun 2010 - Apr 2016

➤ Conducted data mining and retrieval using Mysql to pinpoint critical business areas. My Key Achievements: Identified top customers by using clustering algorithms.

PUBLICATIONS

✦ **LIGHTSEG: EFFICIENT YET EFFECTIVE MEDICAL IMAGE SEGMENTATION**

IEEE International Symposium on Biomedical Imaging (ISBI) 2022

✦ **PAY ATTENTION FOR COVID-19 DETECTION USING EFFICIENT CONVOLUTION**

IEEE International Symposium on Biomedical Imaging (ISBI) 2022

PATENTS

I have developed different deep learning model and optimization technique for industrial application as the company patent at Intelense Inc.

LINKS

✦ LinkedIn: <https://www.linkedin.com/in/husne-jahan/>

✦ Github URL: <https://github.com/husnejahan>

TECHNICAL SKILLS

✦ **Programming Languages:**

4+-years of using Python(Pytorch, Tensorflow, Keras), C/C++, R, SQL, MATLAB

✦ **AI Model Training:**

➤ Machine Learning & Deep Learning: ANN, CNN, 3DCNN, RNN, LSTM, BLSTM, GRU, Object detection API, OpenCV, UNET, GAN, AnoGAN, CycleGAN, DCGAN, Super Resolution GAN (SRGAN), Conditional GAN (CGAN)

➤ Advance Computer Vision: Real-time video analytics and video mining, video processing with AI 3D object detection, Anomaly detection using GAN. Super Resolution GAN (SRGAN) to produce higher resolution images

➤ GPU Computing: NVIDIA GPU, CUDA, cuDNN, Keras, Pytorch, Tensorflow, Tensorboard

✦ **AI Model Deployment and Optimization:**

➤ Deployment API: AWS Sagemaker, Flask server, REST API

➤ TensorRT, TensorflowLite for Model compression

➤ Machine Learning Operations (MLOps): OpenShift cluster, docker container

✦ **Data Management for AI:**

➤ Big Data Analytics: Spark-Scala, Hive, Flume, Sqoop, Pig (in Cludera), Databricks for Spark

➤ Postgres SQL, MongoDB

➤ Operating Systems & Tools: Mac, Windows, Linux, ROS

➤ Cloud: AWS (EC2, S3 bucket storage, EMR cluster, Sage maker, Lambda), Google Cloud

CERTIFICATIONS

Machine Learning- Online Certifications

✦ How Google does Machine Learning- Google Cloud Training- Issued by Coursera.

✦ Launching into Machine Learning-Google Cloud Training- Issued by Coursera.

✦ Convolutional Neural Networks in TensorFlow- Issued by Coursera.

✦ Introduction to TensorFlow for Artificial Intelligence, Machine Learning, and Deep Learning - Issued by Coursera.

✦ Introduction to Containers w/ Docker, Kubernetes & OpenShift- Issued by Coursera.

✦ Containers & Kubernetes Essentials- Issued by Coursera. Authorized by IBM

EDUCATION

VIDEO ANALYTICS - COMPUTER VISION PROJECTS

✈ Design Thinking for Innovation- University of Virginia- Issued by Coursera

Master of Engineering(Electrical & Computer Eng.): Computer Engineering(Machine Learning)

Ryerson University, Toronto, ON, Jan 2019

✈ **Anomaly detection using WGAN for Video Surveillance:** Video analytics platform for public safety. Technical Scope: Python (PyTorch, TensorFlow, Keras), Deep Learning , Flask API(REST), Docker, Digital Ocean, Postgres. **Key Achievements:** Improved WGAN for unsupervised learning in real-time with better accuracy.

✈ **Human Activity detection using 3D CNN for Video Surveillance :** Trained a 3D CNN model using HMD-51 and UCF101 datasets and used different optimization technique like SGD, Adam. Technical Scope: Python (PyTorch), Deep Learning, Tensorboard. **Key Achievements:** The Model can detect human activity in real-time with better accuracy. Applied different optimization technique.

✈ **Detecting custom objects in images/video using :** Trained TF model using custom images, which can detect multiple objects. Technical Scope: Python(TensorFlow), Deep Learning, YOLOV5/V4/V3 with Darkflow for Intelligent systems. **Key Achievements:** Enabled model to detect an object in real time as well as detect multiple objects. The model can detect & recognize custom objects more than 98% accuracy in realtime. Optimized model 5-times less size using TFLite.

✈ **Face detection and Face recognition: deployment with Flask API:** Trained and deployed face recognition model. Technical Scope: DLib, MTCNN, Deep Learning. **Key Achievements:** The model can detect & recognize persons face with mask and without mask in realtime camera feed.

✈ **Image Synthesis with Auxiliary Classifier GANs :** Technical Scope: Python , Deep Learning , ACGAN, Keras. **Key Achievements:** Improved training of generative adversarial networks (GANs) for image synthesis.

✈ **Generative Adversarial Network (GAN) implementations :** Technical Scope: Python, Deep Learning ,DGGAN, PyTorch.

✈ **UNet: Convolutional Networks for Biomedical Image Segmentation:** Technical Scope: Python , Deep Learning . **Key Achievements:** Optimized the model which can segment biomedical images with fewer processing time. Decreased model training parameters.