

# Joinal Ahmed

Computer Vision / Machine Learning Engineer

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## Experience

- Feb 2019– **Software Developer - Machine Learning**, LEADICS CONSULTING INDIA PVT. LTD.  
Ongoing
  - Implemented MaskRCNN & trained it from scratch to only recognize Person and Automobiles.
  - Implemented Pose estimation layers to MaskRCNN.
  - Implemented solution to count unique footfall and generate heatmaps.
  - Optimized RCNN models to run custom solution on Nvidia Jetson Development boards.
  - Implemented APLR systems to recognize and predict indian plates .
- Aug 2018– **Independent Consultant - Machine Learning & NLP**, .  
Ongoing
  - Worked with Cisco & Fankave for generating actionable insights from Cisco Forum, Customer support data.
  - Worked with CloudFactory, Divert & NIH for Image Annotations, Training Object Detector for custom usecases, Deploying CVAT and developing Analytical solutions for monitoring resources.
  - Worked with Embedded Systems Solutions for optimizing ML/DL Solutions and deploying in edge platforms such as Nvidia Jetson, Intel Movidious, Raspberry-pi, & Google Edge TPU .
- May 2018– **Associate Software Engineer - Image Processing**, COGNITIVE MACHINES SOFTWARE SOLUTIONS.  
Jan 2019
  - Implemented research papers based on scene reconstruction.
  - Implemented background subtraction algorithms on dynamic environments.
  - Developed a C++ / Python Library on top of OpenCV for Image Processing algorithms.
  - Developed Qt App for Json parsing and creating dynamic GUI.
- Jan 2018– **AI Engineer - Trainee**, SIGTUPLE TECHNOLOGIES.  
Apr 2018
  - Implemented CNNs for recognizing diabetic retinopathy.
  - Implemented Algorithms for determining quality of Pathological samples.
  - Implemented KIVY & Qt GUIs for Products.
- May 2017– **Software Engineer**, REPAYZ TECHNOLOGIES.  
Dec 2017
  - Implemented APIs for interfacing with NPCI's UPI Payments API.
  - Developed Website for Repayz.
- May 2016– **Software Engineer - Intern**, SWAMY TEHNOSYSTEMS.  
July 2016
  - Developed Driver code for interfacing with 3D printers.
  - Developed 3D Slicing Algorithm.

## Education

- 2013–2017 **Assam University Silchar**,  
*Computer Science and Engineering, Bachelor of Technology.*
- 2011–2013 **Kendriya Vidyalaya Dholchera, CBSE**,  
*High School Leaving Certificate - XII, Scienc.*
- 2011 **Kendriya Vidyalaya Haflong, CBSE**,  
*School Leaving Certificate - X, Scienc.*

## Publication

- 2018 **Mixing Test Set Generation for Bridging and Stuck-at Faults in Reversible Circuit** ,  
*Advanced Computational and Communication Paradigms - Springer, Bachelor of Technology.*

## Certifications

- July 2019 **AWS Certified Solutions Architect - Associate.**
- April 2019 **Deep Learning for Computer Vision**,  
*NVIDIA Deep Learning Institute.*

## Projects

- June 2019–  
Ongoing **Service centre resource utilization metrics**, *Leadics Consulting India PVT. LTD.* .
- Implemented and Optimised Object detector using TensorRT.
  - Deployed the solution to run in Edge devices such as Nvidia Jetson Nano.
- Feb 2019–  
June 2019 **Person Re-Identification ,Unique People Counting & Person Tracking**, *Leadics Consulting India PVT. LTD.*
- Detect & Track People in a CCTV Feed, count unique persons, perform analytics on the data and generate heatmap for the layout.
  - Developed, modified and implemented robust object tracker by combining motion and appearance information to learn deep association metrics.
  - Used the weights from various Convolutional layers of VGG16 model and LOMO for feature extraction.
- Jan 2019 **Fingernail Segmentation for Disease Identification**, *Cognitive Machines Software Solutions.*
- Trained a Neural Network for Segmenting Fingernails from Image and process them for Disease Identification.
- Aug 2018–  
Dec 2018 **3D Reconstruction Using RealSense Depth Scans**, *Cognitive Machines Software Solutions.*
- Generated 3D model of a person for Custom Trailoring applications using RealSense SDK , PCL.
  - Used pretrained models like UNET among others with attention for object detection.
- Jul 2018–  
Aug 2018 **Background Subtraction of Product Pictures on Dynamic Scene** , *Cognitive Machines Software Solutions.*
- Experimenting with matting processes to extract background and foreground in image nearly real-time on mobile devices with automatic trimap generation.
- April 2018 **Diabetic Retinopathy & Andrology**, *Sigtuple Technologies.*
- Trained models for Analyzing Sperm Cell Motility, Detect Diabetic Retinopathy.
  - Implemented Algorithms for determining quality of Pathological samples.
  - Implemented KIVY & Qt GUIs for Products.
- August 2017 **UPI Payments API**, *Repayz Technologies.*
- Implemented APIs for interfacing with NPCI's UPI Payments API for United Bank of India.

## Achievements

- April 2019 **DBS Hack2Hire**, *DBS Bank.*
- Ranked 2nd among 80 teams in the hackathon.
  - Used Customer Bank history to generate personalised offers, also persons current location to give location based offers.
- Feb 2019 **Livspace.com Hackathon**, *Livspace.com.*
- Ranked 1 among 50 teams .
  - Used Tensorflow object detector to detect objects in a frame, used VGG16 to generate feature vectors for each object and to recommend similar products from inventory.
- Feb 2019 **Accenture Digital Hackup** , *Accenture Digital.*
- Won Jury's Fugitive Award .
  - Used RASA to develop a chatbot for Banking Usecase.

## Skills

- Languages Python, C/C++, Java
- Frameworks Tensorflow, Keras, PyTorch
- Vision OpenCV, Scikit-Image, dlib, clib, PIL
- Data Pandas, Seaborn, Matplotlib
- GUI Qt, Kivy
- Utilities Anaconda, Git, Sublime Text, Jupyter Notebook

## Relevant Courses

- Online Convolutional Neural Networks for Visual Recognition, Deep Learning for NLP, Deep Learning.Ai Specialization, Introduction to Machine Learning
- Classroom NLP, Neural Networks, Image Processing, Numerical Methods, Calculus, Statistics and Probability, Economics,