

## EXPERIENCE

<b>Computer Vision Engineer</b> Hyderabad, India	<b>Einsite</b>	<b>Aug, 2020 - Present</b>
<ul style="list-style-type: none"><li>Designed machine learning models for modelling and tracking productivity of heavy machines in construction sites.</li><li>Implemented models on unbalanced dataset to improve on site machine operations classification.</li><li>Worked on graphical models and sampling techniques for classification of time series operations of machine parts.</li><li>Implemented feature extraction and custom LSTM, CNN models on videos for machine action recognition.</li><li>Worked on TFLITE models for object detection and key point detection on android applications.</li><li>Research and implementation of various state-of-the-art literature to design algorithms.</li></ul>		
<b>Research Intern</b> Chandigarh, India	<b>CSIR-Central Scientific Instruments Organization</b>	<b>Jul, 2019 – Jun, 2020</b>
<ul style="list-style-type: none"><li>Developed action recognition algorithm in deep networks to recognize human actions in crowded areas under poor illumination, cluttered background, obstructions.</li><li>Developed CNN - Bi-LSTM architecture for identifying human actions and implemented attention mechanism to better focus on actions in highly crowded areas.</li><li>Assisted full time researchers in the areas of computer vision, deep learning to build intelligent models.</li></ul>		
<b>Assistant System Engineer</b> Kolkata, India	<b>Tata Consultancy Services</b>	<b>Jul, 2017 – Jul, 2018</b>
<ul style="list-style-type: none"><li>Automated license assignment process for user and shared mailbox.</li><li>Automated the process of user creation and shared mailbox in Office 365 environment</li><li>Maintenance of Oracle Web Center Forms Recognition to retrieve information from mail.</li></ul>		

## TECHNICAL SKILLS

- **Programming Language:** Python, SQL, C++
  - **Object Oriented Programming**
  - **Data Science Skills:** Deep Learning, Machine Learning, Computer Vision
  - **Deep Learning Algorithms:** CNN, LSTM, RNN, Attention, Multi-Layer Perceptron
  - **Machine Learning Algorithms:** Random Forest, Decision Trees, Boosting, Bagging
  - **Frameworks and tools:** Keras, Tensorflow, OpenCV, Matplotlib, SciKit-Learn, Pandas, Imblearn, OpenVINO
  - **Unbalanced Dataset handling**
  - **Working in Linux**

## PROJECTS

- **Video Classification in Keras** (2020): Developed action recognition algorithm using CNN-LSTM, 3D-CNN, MLP in Keras with Tensorflow backend. Used VGG, ResNets for transfer learning and subsampled videos to reduce computational cost.  
**Keywords:** Transfer Learning, CNN, LSTM, Keras, OpenCV, MLP, Time Distributed, 3D CNN, Feature Extraction

- **Fraud Mobile Transaction Detection** (2019): Developed machine learning algorithm to control massive transfers from one account to another and flag illegal attempts  
**Keywords:** sklearn, KNN, Logistic Regression, Naive Bayes, Support Vector Machine, k-fold Cross Validation
- **Identification of Medical Abnormalities in X-Ray images** (2019): Developed image classification CNN architecture by transfer learning from ResNet-18 to spot tuberculosis in chest x-rays. Implemented data augmentation, scaling, preprocessing. Penalized loss for misclassifying abnormalities.  
**Keywords:** ResNet-18, CNN, Data Augmentation, Scaling, Transfer Learning, Keras, Matplotlib, Penalized Loss

#### COURSES & CERTIFICATIONS

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- Stanford CS231n: Convolutional Neural Networks for Visual Recognition
- Introduction to TensorFlow for Artificial Intelligence, Machine Learning, and Deep Learning by Coursera (Aug, 2019)
- Improving Deep Neural Networks: Hyper parameter tuning, Regularization and Optimization by Coursera (Sep, 2019)
- Sequence Models by Coursera (Sep, 2019)
- Python for Data Science and AI by IBM developer (Sep, 2019)
- AI From the Data Center to the Edge - An Optimized Path Using Intel Architecture by Intel Labs (Nov, 2019)

#### EDUCATION

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- **M.Tech in Mechatronics** with aggregate percentage 88% from Indian Institute of Engineering Science and Technology, Shibpur, Kolkata, India. (Jul, 2018 – Jul, 2020)
- **B.Tech in Electronics and Communication** with DGPA 8.48 from Kalyani Government Engineering College, Kalyani, WB, India. (Aug, 2013 – Jun, 2017)
- **CBSE (class 12<sup>th</sup>)** with aggregate percentage 90.2% from Vikas Vidyaniketan, Visakhapatnam, India. (Apr, 2012 – Mar, 2013)
- **ICSE (class 10<sup>th</sup>)** with aggregate percentage 88.86% from Holy Rock School, Burdwan, IN. (Apr, 2010 – Mar, 2011)

#### Awards & Recognition

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- Scored highest aggregate marks in M.Tech of Mechatronics Department, IEST, Shibpur
- Qualified GATE 2017, 2018 and availed GATE scholarship from MHRD, Govt. of India
- Star Team Award (Tata Consultancy Services): Awarded for contribution to teams' success in automating mail handling tasks