Animikh Aich

Team Lead – Delhi

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Location: *Delhi, India*

Skills

Tensorflow	PyTorch
OpenCV	Numpy
Keras	Python
Docker	Scikit-Image

Initiation

Co-Founded "Team Technoids"

It is an Initiation to introduce the students of our college to the exciting world of Artificial Intelligence and Computer Vision through introductory workshops.

The responsibility of the same has been handed over to a selected few, and hence is currently being maintained by them.

Education

- **2015-2019** RNS Institute of Technology, Bangalore, IN
  BE, Electronics and Communication Engineering

- **2008-2015** Bharatiya Vidya Bhavan, Kolkata, IN
  Science - PCMB

Experience

JUL 2020–Present *Team Lead – Delhi | Wobot Intelligence*

- **Lead** a team of **9 Developers at the Delhi Office**, along with up to **5 Interns**.
- **Developed** Proprietary **Multi Stream Inference Architectures** for both Intel CPUs and Nvidia GPUs using **OpenVINO Model Server** and **Tensorflow Serving**.
- **Lead** the development of the **Product,** which consisted of **5 Use-Cases** based on **up-to 8 Deep Learning Models** running on an **Intel CPU** for **Multiple Streams**.
- **Developed Face Mask Detection** and **Handwash Detection** using **Light-weight** and **Optimized Algorithms**, which became a few of the **key models** used in the **Product**.
- Contributed to the development of **Wobot Toolkit** – a Generalized Model Training and Dataset Management/Annotation toolkit used for fast prototyping internally.
- Developed **Efficient Data and Model Training pipelines** using Tensorflow that allowed faster and more optimized training, using **Tf.Data**, **XLA**, and **Mixed Precision (FP16) Training**, thus reducing Model Training time to ~$1/5^{th}$.
- **Conducted** the **technical round of interview** for recruits.

JUN 2019–JUN 2020 *Computer Vision Engineer | Wobot Intelligence*

- Worked as a developer in the **R&D** and **Product Development** Team.
- Devised **Synthetic Dataset Generation Algorithms** which allowed to **artificially generate data** for Object Detection.
- **Developed** and **deployed** several algorithms for real-time object detection, tracking, and classification on **CCTV footage**.
- Worked on **developing** a novel person reidentification algorithm, which is used to **re-identify** a person and hence calculate his accurate **wait-time** even when the object of interest suffers from lengthy occlusions.
- Worked on **IP creation** by **leading** the **development** of an **optimized** person detector, **fine-tuned for CCTV footage**, as well as creating object detectors for other custom objects.
- Worked on the **optimization** and **deployment** of Deep Learning models **at scale** for both **edge** and **cloud**.
- Hands-on with Deep Learning Toolkits: **Intel's OpenVINO Toolkit**, **Nvidia's Transfer Learning Toolkit (TLT),** and **Tensorflow Lite**.
- **Deployed** several models on **servers** by integrating them with **Flask** and **Tensorflow Serving APIs**. Additionally, used **Docker** for **containerized deployments**.
- **Conducted** the **technical round of interview** for recruits.

JUL–AUG 2019 *Freelance Technical Blogger | KnowledgeHut*

FEB–JUL 2019 *Freelance Technical Blogger | ZeoLearn*

JAN–MAR 2019 *Data Science Intern | KrishiHub (Letter)*

JAN 2018 *Artificial Intelligence Intern | KnightsRoboCorp (Certificate)*

Publications *(Google Scholar Link)*

- "**Encoding Web-based Data for Efficient Storage in Machine Learning Applications**" | ICInPro-2019 | *IEEE (Link)*
- "**Sentiment Analysis of Restaurant Reviews using Machine learning Techniques**" | ICERECT-2018 | *Springer (Link)*
- "**Analysis of Customer Opinion Using Machine Learning and NLP Techniques**" | ICCS-2018 | *Elsevier (Link)*
- "**Sales-forecasting of Retail Stores using Machine Learning Techniques**" | CSITSS-2018 | *IEEE (Link)*

Projects – College / Personal

Facial Recognition Dashboard | *(GitHub)*
Highlights: Front-End Dashboard, Face Detector, Face Recognizer
Keywords: Tensorflow, Keras, OpenCV, Python, MTCNN, VGG-Face, Flask, HTML, CSS

Automatic Helmetless Rider Detection using Deep Learning | Final Year Project | *(YouTube)*
Highlights: Helmet/No-Helmet Detection, License Plate Detection, and Custom OCR
Keywords: Tensorflow, Keras, OpenCV, Python, Classification, Detection

Classification of Normal and AF ECG Signals using Convolutional Neural Networks | *(GitHub)*
Highlights: 1D-CNNs, *93.10%* accuracy *with 14.7M* parameters
Keywords: Tensorflow, Pandas, Python, Jupyter Notebook

Time-Lapse Creator Desktop App | *(GitHub)*
Highlights: Graphical User Interface (GUI), Video Reader, Video Writer, Developed for Real-World use-case
Keywords: Tkinter, OpenCV, Python

University Result Downloader Desktop App | RNSIT ECE | *(YouTube) (GitHub)*
Highlights: Web-Scraping, Graphical User Interface (GUI), Used by Dept. of ECE, RNSIT
Keywords: PyQT5, Pandas, Python, Requests, BeautifulSoup

Facial Recognition Based Door Lock/Unlock System | Project at "The Valley Bootcamp" | *(GitHub)*
Highlights: Arduino Uno, Facial Recognition System, Face Detector, USB Serial Interface for Python
Keywords: Face Recognition, OpenCV, Python, DLib, PySerial

Other Projects

- Invisible Cloak using OpenCV [APR 2019] *(GitHub)*
- Word-based **Sentiment Analysis** Model using **Naïve Bayes Classifier** [MAR 2019] *(GitHub)*
- **Text Summarization** Algorithm with GUI. [MAR 2018] *(GitHub)*
- **Web Scraping Project** – Translator with GUI. [MAR 2018] *(GitHub)*
- Volumetric Statistical Estimate Preparation Instrumental Analysis (VSEPIA). [MAR 2018] *(GitHub)*

Honors & Achievements

- Secured **1st prize** at **Wobot Hackathon** for developing **end-to-end Lightweight** Handwash Detector. *(Link 1, Link 2)*
- Received **Best Outgoing Student - 2019**, from RNS Institute of Technology. *(Link)*
- Received **Letter of Appreciation** from HoD, ECE, RNSIT for my contribution to the institution. *(Link)*
- Secured **1st prize** in the Software category for "*Automatic Helmetless Rider Detection*", RNSIT. *(Link)*
- Secured **2nd prize** across all categories for "*Automatic Helmetless Rider Detection*", RNSIT. *(Link)*
- Secured **Best Paper Award** at 3rd ICERECT-2018 *(Link)*
- Secured **1st prize** in Social Impact category for *"VSEPIA"* at ECE Open House Expo 2018, RNSIT. *(Link)*
- Secured **1st prize** in Social Impact Category for *"Automatic Kitchen Safety Mechanism"* at ECE Open House Expo 2017, RNSIT. *(Link)*