Balaji Balasubramanian

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EDUCATION

Master's in Science, Computer Science
Université de Montréal (MILA)

09/2020 - Present *4.0/4.3*

- Professional MSc. in Machine Learning
- Machine Learning -4/4.3, Data Science-4/4.3, Representation Learning-4/4.3, Advanced ML Projects- Success

Bachelor of Engineering, Information Technology
Vidyalankar Institute of Technology (Mumbai University)

06/2015 - 06/2019 *6.96/10*

EXPERIENCE

Artificial Intelligence Intern
Humanware Technologies

05/2021 - Present *Montreal, Canada*

- Combined Public and Private Datasets for the task of House Number Recognition.
- Implemented an Object Detection Model EfficientDet for House Number Recognition.
- Compressed and Converted the Object Detection Model to Tflite format for deployment on a mobile device.

Data Science Intern
Simsol Technologies

02/2020 - 07/2020 *Mumbai, India*

- Implemented image classification algorithms for vehicle images using Keras, Pytorch and Fast AI libraries.
- Implemented object detection algorithm to detect various household items using Tensorflow Object Detection API.
- Generated text data relevant to the Indian region using Faker and Indictrans.
- Built text-matching algorithm using Tensorflow, Keras and Fuzzywuzzy libraries. These were used for Aadhar and Pan Card validation.
- Worked on Robotic Process Automation using TagUI library.

Research Intern
Z Nation Lab

01/2019 - 02/2019 *Mumbai, India*

Startup Accelerator

- Analyzed 300 early-stage startups in sectors like Retail, Real Estate, Healthcare, and FinTech.
- Analyzed 30 pitch decks of early-stage startups.
- Performed detailed research on the applications of various technologies like AI, Blockchain, IoT, Augmented Reality and Cloud Computing.

EXPERIENCE

Startup School Graduate

Y Combinator's Startup School Advisor Track

07/2018 - 11/2018

- Worked on my startup Particle AI during the Y Combinator's online Startup School program.
- Completed the Startup School coursework.
- Participated in weekly meetings organised by Jason Wang, the founder of TrueVault.

SKILLS

Machine Learning | Deep Learning | Python | Matplotlib | Pandas | Numpy | Scikit-Learn | Keras | Tensorflow | Pytorch | AWS

RESEARCH PUBLICATIONS

Analysis of Facial Emotion Recognition

IEEE 3rd International Conference on Trends in Electronics and Informatics (ICOEI 2019)

- This review paper covers the datasets and algorithms used for the task of Facial Emotion Recognition(FER). The algorithms explained are Support Vector Machines and different varieties of Convolutional Neural Network.

Deep Learning based approaches for Recommendation Systems

Springer 2nd International Conference on Intelligent Data Communication Technologies and Internet of Things (ICICI 2019)

- This paper studies different Deep Learning methods for recommendation systems highlighting the important aspects of design and implementation. Applications of CNN and RNN for audio, text, image, and video data are studied.

PROJECTS

Social Media Prediction

- This project was built as a part of the data science course. In this project, various machine learning models like Xgboost, Support Vector Regressor and Stacking CV Regressor were built to predict the number of likes for a social media profile. Ranked 4/31 in Kaggle leaderboard.

Image Classification of Drawings

- This project was built as a part of a Kaggle competition in the machine learning course. This is an image classification task in which a Convolutional Neural Network model was built using Tensorflow and Keras to classify images of drawings.

ArXiv Paper Classification

- This project was built as a part of a Kaggle competition in the machine learning course. This is a text classification task in which techniques like tf-idf, count vectorizer and models like Logistic Regression, Multinomial Naive Bayes and Support Vector Machines were used.

Facial Emotion Recognition using Deep Learning

- Built CNN model using Keras and Open CV to detect people's facial emotions and published a research paper in an IEEE Conference (ICOEI 2019).

Toxic Comments Classification Challenge

- Built a model that can detect abusive texts using an ensemble model consisting of various algorithms such as GloVe Embeddings, LSTM, GRU and Attention model. Achieved a leaderboard rank 280/4551(top 7%) with an accuracy score of 0.98.

LANGUAGES

English
Full Professional Proficiency

Tamil
Native or Bilingual Proficiency

Hindi
Native or Bilingual Proficiency