

Lohithashva B H

Ph.D. in Computer Science

Personal Information

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Areas Of Research

Interests:

- ❑ Artificial Intelligence
- ❑ Machine Learning
- ❑ Pattern Analysis
- ❑ Deep Learning
- ❑ Computer Vision
- ❑ Image Processing
- ❑ Predictive Analysis
- ❑ Linear Algebra
- ❑ Algorithms

Technical Skills:

Languages:

- Python

Framework:

- TensorFlow
- Keras
- PyTorch

Neural Architecture:

- ❑ CNN
- ❑ RNN
- ❑ LSTM

IDE:

- ❑ Anaconda
- ❑ Jupyter-Notebook
- ❑ VS Code
- ❑ MATLAB

Libraries:

- numpy
- pandas
- cv2
- scikit-learn

Summary

- ❑ Ph.D. (Computer Science) (VTU, Belagavi) **6 years** qualitative research experience in Machine Learning, Video Processing, Deep Learning, Computer Vision.

Experience

- ❑ Senior Research Fellow – January 2015 to April 2021
- ❑ Image processing (Feature Extraction and Analysis)
- ❑ Video Processing (Shot Boundary Detection, Key Frame Extraction and Representation)
- ❑ Full-time faculty in Department of Studies in Computer Science, University of Mysore, Mysore – October 2010 to December 2015

Qualification

- ❑ Ph.D. (Computer Science) – Sri Jayachamarajendra College of Engineering (SJCE, Mysuru) (VTU) – 2021 (Thesis Submitted)
- ❑ MS (Computer Science) – Department of Studies in Computer Science, University of Mysore, Manasagangotri, Mysuru– 2010
- ❑ B.Sc (Mathematics, Statistics, Computer Science), Yuvaraja's College, Mysuru-2007

Achievements

- ❑ Awarded UGC (University Grant Commission) Fellowship for Research
- ❑ Reviewer for SNCS (Springer Nature Computer Science)
- ❑ Visiting Professor at Huanghuai University of China, Zhumadian, China, April -May 2013.

Technical Expertise

- ❑ Scientific research in machine learning. Designing new techniques and applying to various types of data (Videos/Images).
- ❑ Have built several well-tested machine learning algorithms in Python: neural networks, k-nearest neighbor, random forest, ensemble learning, SVM, Logistic regression, Naïve Bayesian with ADA boost.
- ❑ Strong knowledge on Analytics and Prediction Algorithms.
- ❑ Worked on Time Series Forecasting using LSTM-RNN architecture.
- ❑ Worked on Real-time Pedestrian Detection System using YOLOv3.
- ❑ Worked on Abnormal Event Detection using Conventional methods.

Projects

Research Title: “Abnormal Video Event Detection for Video Surveillance Applications” Role:

Worked as **Full-time Research Scholar** in **SJCE Mysuru** from **January 2015 to April 2021**

Exposure:

- ❑ Development of Feature Extraction Model using Machine Learning
- ❑ Development of Supervised and Unsupervised Classifiers
- ❑ Development of Feature Selection Techniques for Abnormal Event Detection
- ❑ Development of Classifier using Deep Learning

IDE: MATLAB, Jupyter Notebook

Project name: Real-Time Pedestrian Detection System

Description: Pedestrian detection is an essential and significant task in any intelligent video surveillance system. This application is using in Automotive Industry to detect walking persons on the road. Here we are using object detection techniques to detect pedestrians. **YOLOv3** is used to train the model.

Responsibilities

- ❑ Data analysis and Data Preparation
- ❑ Identifying techniques
- ❑ Model training, Validating and Hyper-parameter tuning
- ❑ Fine tuning **YOLOv3** network and Inference on **YOLOv3** network.

IDE: Anaconda, Jupyter Notebook

Project name: Electricity Bill Price Prediction based on LSTM and RNN

Description: Time series forecasting is a technique for the prediction of events through a sequence of time. The techniques predict future events by analyzing the trends of the past. This application is using in Weather Forecasting, Electricity Bill price prediction etc, Here we are using deep learning techniques to predict electricity bill price. **LSTM-RNN** is used to train the model and Keras framework is used for implementation.

Responsibilities

- ❑ Data analysis
- ❑ Feature Engineering using Deep Learning techniques.
- ❑ Identified and applied proper Validation methods
- ❑ Model training, Validating and Hyper-parameter tuning
- ❑ Fine tuning **LSTM-RNN** deep neural network architecture.

IDE: Anaconda, Jupyter Notebook

Publications

Book Chapter

- ❑ B. H. Lohithashva, V. N. M. Aradhya, D.S Guru, **“An Integration of Handcrafted Features for Violent Event Detection in Videos”**. Recent Trends in Computational Intelligence Enabled Research, 2020, (Elsevier), (Accepted).

International Journals

- ❑ B.H Lohithashva, V.N Manjunath Aradhya, D.S Guru, **“Violent video event detection based on integrated LBP and GLCM texture features”**. Revue d'Intelligence Artificielle (RIA), Vol. 34, No. 2, pp. 179-187. (Scopus, dblp, Google Scholar).

- ☐ B. H. Lohithashva, V. N. Manjunath Aradhya, D.S Guru **“Violent video event detection based on spatio-temporal features”**, International Journal of Safety and Security Engineering (IJSSE), 2020 (Scopus, dblp, Google Scholar), (Accepted).

International Conferences

- ☐ B. H. Lohithashva, V. N. M. Aradhya, H. T. Basavaraju, and B. S. Harish, **“Unusual crowd event detection: An approach using probabilistic neural network,”** in Information Systems Design and Intelligent Applications. Mauritius, Springer, (2019), (Scopus, Procedia, Google Scholar), pp. 533–542.
- ☐ B. H. Lohithashva, V. N. M. Aradhya, D.S Guru **“Violent event detection: An approach using GHOG-GIST descriptor”**, International conference on Automation, Signal Processing, Instrumentation & Control (iCASIC), Vellore, Tamil Nadu, India, Springer, (2021), (Scopus, Procedia, Google Scholar), vol.700, pp.881-890.
- ☐ B. H. Lohithashva, V. N. Manjunath Aradhya, **“Violent Video Event Detection: A Local Optimal Oriented Pattern based Approach”**, International Conference on Applied Intelligence and Informatics 2021 (AII 2021), Nottingham, United Kingdom, (Scopus, Google Scholar). (Accepted).

Online Certified Courses

- Certified in **Python for Data Science** course, powered by **IBM Developer Skills Network** (2020)
- Certified in **Data Analysis with Python** course, powered by **IBM Developer Skills Network** (2020)
- Certified in **Machine Learning with Python** course, powered by **IBM Developer Skills Network** (2020)
- Certified in **Deep Learning Fundamentals** course, powered by **IBM Developer Skills Network** (2021)
- Certified in **Deep Learning with TensorFlow** course, powered by **IBM Developer Skills Network** (2021)

My Publications Visit

Google Scholar : <https://scholar.google.com/citations?user=vWf1bJkAAAAJ&hl=en>

Research Gate : <https://www.researchgate.net/profile/Lohithashva-B-H>

LinkedIn : <https://www.linkedin.com/in/lohithashva-b-h-0a21b059/>

Declaration:

I do hereby declare that above particulars of information and facts stated are true, correct and complete to the best of my knowledge and belief.

Date: 26/08/2021

Place: Mysuru

(Lohithashva B.H)