DURGESH K. SINGH

Bengaluru,India | (+91)8840177581 | durgesh080793@gmail.com | durgesh93.github.io

SUMMARY

- Working as a Research intern in Video Analytics Lab, IISc Bengaluru, having 1 year of research work experience and one publication in ECCV.
- 2.5 years experience as a data scientist in Tata Consultancy Services. Developed advanced statistical and machine learning models based on business initiatives.
- Highly skilled at building solutions using AI and ML to deliver insights and implement action-oriented solutions to complex business problems.
- 4 Years of industry experience in banking, e-commerce, health-care and customer relationship management sector.

EDUCATION

- M.Tech, Machine Learning and Computing, Indian Institute of Space Science and Technology,Trivandrum 2018-2020,**CGPA 9.43/10**
- B.Tech, Information Technology, Institute of Engineering and Technology,Lucknow,2010-2014, **Per. 77.1/100**

EXPERIENCE

OrcaSound

Opensource *Aug 2020 to present*

- My responsibilities are to analyze existing data pipeline and design active learning strategies to reduce manual annotation efforts.
- Build an active learning playground tool to expedite existing research

Video Analytics Lab **IISc Bengaluru**

Research Intern *Aug 2019 to present*

- Worked in the field of computational photography and developed a practical and efficient de-ghosting method to process high-resolution HDR images (paper accepted at ECCV'20)
- Proposed a deep learning-based approach for multi-source domain adaptation in image recognition models (paper under review at NIPS'20)

Tata Consultancy Services

System Engineer *July 2014 to Sept 2018*

- Performed market basket analysis on customer purchase data for a dental health-care company. This helped to improve existing retail-sales by five percent.
- Developed a *profile recommendation system* for employers and representatives, for enhancement of Adapt CRM platform, which is used by Hays Plc
- Worked on wholesale banking product WSS-ATLAS, which is used by major European banks. My responsibilities were to improve existing payment processing system of ATLAS and make it more fault-tolerant for high volume batch transactions.

TECHNICAL SKILLS

- **Python** Numpy, Scipy,Pandas
- **Data Visualization** Matplotlib, Seaborn
- **Machine Learning** Scikit-Learn,XGboost, Weka
- **Deep Learning** PyTorch,Tensorflow,PIL,OpenCV
- **Tools** Jupyter,Sublime,Docker
- **Other Skills** Amazon AWS, C, Sql, Algorithms, Data Structures, Google Cloud Platform, Agile, Latex, Microsoft office

CERTIFICATES

- **Python 3 Programming**, Coursera certificate, University of Michigan
- **Mathematics for Machine Learning**, Coursera certificate, Imperial College London

- **Computer Vision Basics**,Coursera certificate,University at Buffalo

AWARDS

- Received ***"On The Spot Award"*** for significant contribution to the organization in Tata Consultancy Services.
- Received ***"TCS Service and Commitment Award"***
- Received ***"Best Speaker Award"*** in ACL for public speaking

PROJECT DETAILS

Active Learning and Listening for Orcas
Open Source Project,Orcasound,University of Washington
OrcaSound collects a vast amount of sound data from the hydrophone network in the Salish Sea. However, the cost of labeling data for training Deep Learning-based approaches is very high. I am currently involved in building an active learning playground tool to expedite the existing research and propose a novel transfer learning-based technique for marine sound detection and classification.

Multi Source Domain Adaptation for Visual Tasks
M.Tech thesis project, advised by Prof. Venketesh Babu,VAL IISc,NIPS-2020 Submission
Machine learning algorithms assume training data and test data should come from the same distribution and do not generalize well in presence of domain shift. Domain adaptation approaches are used, to adapt, a trained machine learning model in the source domain to the desired target domain in an unsupervised manner. My thesis project focuses on a simple and efficient approach, for multi-source domain adaptation.

Practical and Efficient HDR photography using CNN
Research paper,ECCV-2020,VAL IISc
In this research paper, we proposed a practical and efficient approach to de-ghosting HDR images. Our method can process images up x16 times more resolution than the existing state of the art methods without compromising significant performance.

Market Basket Analysis
Industry Project,Tata Cosultancy Services
Performed market basket analysis on customer purchase data for a dental health-care company. This project aimed to look for combinations of items that occur together frequently in transactions and decide which *"product combos"* to offer in the holiday season.

Profile Recommendation System
Industry Project,Tata Cosultancy Services
Building a job seeker profile recommendation system for employers and representatives for enhancement of Adapt CRM platform, which is used by Hays Plc.

Comparative Analysis of GRU and its variants on POS Tagging problem
POS Tagger was implemented using GRU and its variants and comparative analysis was performed to determine which variant works best for the problem.

Image segmentation using K-Means,Fuzzy C-means and Mean Shift Algorithm
Various techniques for image segmentation were compared with each other using the ground truth.