Pradeep Singh

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EDUCATION

SAN DIEGO STATE UNIVERSITY
M.S. in Data Science
Expected Dec 2019 | San Diego, CA
GPA: 3.6/ 4.0

UNIVERSITY OF MUMBAI
B.S. in Electrical Engg.
Aug 2011 - June 2015 | India

LINKS

Github:// **pradeepsinngh**
Webpage:// **pradeepsinngh.github.io**
LinkedIn:// **pradeepsinngh**
Twitter:// **@pradeep_sinngh**

COURSEWORK

MACHINE LEARNING
Deep Learning (NLP)
Machine Learning
Numerical Optimization
Parallel Computing
Computer Vision

DATA SCIENCE
Statistical Inference
Bayesian Statistics
Techniques of Data Science
Foundations of Data Science

SKILLS

PROGRAMMING
Python • C• C++ • Matlab • R

MACHINE LEARNING
TensorFlow • Keras • Numpy
NLTK • SKLearn • Gensim

DATA & VISUALIZATION
SQL • Pandas • R Studio • Shiny
StatsModels • Scrapy • Tableau
Matplotlib • Plotly • Seaborn

PLATFORMS
Google Cloud • AWS • macOS
Linux • Windows • GitHub

ACHIEVEMENTS

2018   Tuition Wavier + Stipend
2017   Tuition Wavier + Stipend
2015   Research Fellowship at RRI
2014   Undergrad. Research Fellowship
2014   Editor-in-chief at KC-Xplore
2013   Vice-chairperson - IEEE Student Branch

RESEARCH

COMPUTATIONAL SCIENCE RESEARCH CENTER | Research Assistant
Aug 2017 – Till date | San Diego, CA
- Working on principal based approaches to target detection in visual neurons in dragonflies using neural computation.
- Working on modeling and characterizing a mechanism (response facilitation) by which dragonflies detect and react to small moving targets by increasing sensitivity to small objects that move along continuous paths.
- Parallelizing models using GPUs and analyzing gigabytes of data in Matlab.
- Comprehensive parametric study of our model outlining how and why it behaves with different values of parameters and thus characterizing the facilitation mechanism.

PROJECTS

NEURAL MACHINE TRANSLATION | NLP/ Deep Learning (code | report)
- Built an end-to-end machine translation pipeline using recurrent neural network based models: simple RNN, RNN with Embedding, Bidirectional RNN, Encoder-Decoder RNN & achieved accuracy of 98%.

IMAGE RECOGNITION USING CNN | Computer Vision (code | report)
- Built and trained 5 different Convolutional Neural Networks using Keras and TensorFlow to classify 70,000 fashion images into 10 labels.
- Achieved accuracy of 95% with VGG model + batch normalization.
- Used data augmentation & feature engineering techniques to add more images to the dataset, which increased the accuracy by 20%.

BAYESIAN OPTIMIZATION | Numerical Optimization (code | report)
- Build an hyperparameter optimization algorithm using bayesian methods that finds better hyperparameters for machine learning models in smaller number of steps than random or grid search.
- Comprehensive analysis and study of different hyperparameter tuning algorithms in machine learning.

PARALLELIZED DEEP LEARNING | Parallel Computing (code | report)
- Implemented sequential and parallel neural network model using data based parallelism in Python using MPI.
- Trained both models on CPU and GPU and achieved 50% speed up in training time with parallel model.

PREDICTIVE MODELING AND ANALYSIS | Data Science [code]
- Cleaning and analyzing Countries of the World data set using Pandas.
- Built a predictive model using regression models, random forest model to predict the GDP of countries using SKLearn.
- Visualized the results using Matplotlib and Seaborn.

SENTIMENT ANALYSIS | NLP/ Deep Learning [code]
- Built an end-to-end sentiment classification system using Recurrent neural network and Naive Bayes classifier to classify the sentiment of 50,000 movie reviews in IMDb dataset.