Pradeep Singh

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EDUCATION

SAN DIEGO STATE UNIVERSITY
M.S. in Computational Data Science
May 2020 | San Diego, CA
GPA: 3.7/ 4.0

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

COURSEWORK

MACHINE LEARNING
Deep Learning
Machine Learning
Numerical Optimization
Parallel Computing

DATA SCIENCE
Statistical Inference
Big Data: Tools and Methods
Techniques of Data Science
Foundations of Data Science

SKILLS

PROGRAMMING
Python • Matlab • C/C++

MACHINE LEARNING
TensorFlow • Keras • Scikit-learn
PySpark

DATA & VISUALIZATION
SQL • Pandas • Matplotlib
Numpy • Seaborn • Scipy

PLATFORMS
macOS • Linux • Git • Docker

GITHUB PROJECTS

Deep Clean : Python package to clean image and text data.
Quick ML : Read ML notes on the fly.
Data Science 101 : How-to-Guide.

ACHIEVEMENTS

2018	Tuition Scholarship
2017	Tuition Scholarship
2016	Founder @ **ResearchX**
2013	Editor at KC-Xplore
2013	Vice-chairperson - IEEE Branch

EXPERIENCE

DASSAULT SYSTÈMES | Deep Learning Research Intern | (Paper | Poster)
June - Dec 2019 | Boston, MA

- Research focused on Deep Learning for CFD Simulations.
- Researched and proposed novel deep learning solutions for accelerating CFD simulations using neural networks.
- Developed SRCFD, a generalized and platform agnostic framework, that can super resolve coarse-to-fine CFD simulations.
- Developed Python package to extract, process and convert mesh data to graph data.
- Built in-house data set for Dassault Systèmes.
- Built docker images and containers to containerize ML models.

RESEARCH

SAN DIEGO STATE UNIVERSITY | Research Assistant | (Thesis | Poster)
Aug 2017 - May 2019 | San Diego, CA

- Research on Neural mechanisms for target (object) tracking in visual system.
- Built computational models of networks neurons and astrocyte in Matlab.
- Simulated computational models of facilitation mechanism, calcium dynamics in biological cells and analyzed gigabytes of data in Matlab.
- Carried out comprehensive parametric study of our models and thus characterizing facilitation in visual system.
- Presented Poster at ICIV 2019 and one journal paper (in-progress).

PROJECTS

NEURAL MACHINE TRANSLATION | NLP/ Deep Learning (code | report)
- Developed an Machine translation pipeline using recurrent neural networks: simple RNN, RNN with Embedding, Bidirectional RNN, Encoder-Decoder RNN.

IMAGE RECOGNITION USING CNN | Computer Vision (code | report)
- Built 5 different Convolutional Neural Networks using Keras and TensorFlow to classify 70,000 fashion images into 10 labels.

AUTOENCODERS | Computer Vision (code | report)
- A survey project on family of Autoencoders. Implemented different forms of autoencoders: sparse, denoise, contractive, variational autoencoder in tensorflow.

BAYESIAN OPTIMIZATION | Numerical Optimization (code | report)
- Built an hyperparameter optimization algorithm that finds better hyperparameters for machine learning models in smaller number of steps than random or grid search.

PARALLELIZED DEEP LEARNING | Parallel Computing (code | report)
- Accelerated neural network model training time by implementing data based parallelism using MPI.

CHURN PREDICTION | Data Science (code)
- Built different ML models: SVM, Tree based models, logistic regression for predicting customer churn rate using PySpark and Scikit-learn.

SENTIMENT ANALYSIS | NLP/ Deep Learning (code)
- Built an sentiment classification system using: Recurrent neural network, Naive bayes and Gradient boosting.