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)
June - Dec 2019 | Boston, MA

- Owned, researched and proposed a novel end-to-end deep learning pipeline for accelerating CFD simulations using neural networks.
- Developed SRCFD, a generalized and platform agnostic framework, based on CNN and GCN, that can super resolve coarse-to-fine CFD simulations.
- Built in-house data set for Dassault Systèmes.

HERE TECHNOLOGIES | Analyst
2016 - 2017 | Mumbai, India

- Worked as GIS Analyst in data-processing team.

RAMAN RESEARCH INSTITUTE | Research Assistant
2015 - 2016 | Bangalore, India

- Worked on parallelizing signal processing algorithms using OpenCL. A speed up of 70% in time and a decrease in 30% resource utilization was accomplished.

RESEARCH

COMPUTATIONAL SCIENCE RESEARCH CENTER, SDSU | Research Assistant
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.
- Studied, modeled 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.

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.