RUDRA SAHA

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CORE COMPETENCIES: Python, Machine Learning, Data Analysis, Problem Solving.

EDUCATION

Master of Science, Computer Engineering (CS)
Arizona State University, Tempe, AZ — May 2018

Bachelor of Technology, Electronics Engineering — 3.6/4.0
Indian Institute of Technology, BHU, Varanasi, IND — May 2014

EMPLOYMENT

Cyber-Socio Intelligent Systems (CySIS) Laboratory
Volunteer Software Developer ASU, Tempe, AZ Aug 2016– Present

- Developing automatic parser tag generation using python on a linux framework from scratch, integrating with existing code.
- Improvement of crawler infrastructure to seamlessly accommodate for new websites.
- Implementing crawlers and parsers for multiple websites as part of the scrapper team with git for version control.

Cisco Systems
Software Engineer I Bangalore, IND Aug 2014 – April 2016

- **Project Leader - Predicting route failures in EIGRP protocol using temporal data –** Implemented an **anomaly detection** system to predict route failures on interface level of a router.
- Wrote wrappers in C to invoke learning algorithms written In Python being run on Apache Spark cluster. Team of 4.
- Designed a version of One-Class SVM classifier to fit the problem description and realized an implementation of DBSCAN clustering algorithm. Used it for indirect labeling.
- Selected for **CISCO DESIGN and INNOVATION CONFERENCE (CDIC), 2016**. Presented a talk as part of **NMLRG in IETF-95**.
- Implementation of new features and improvement of current ones for EIGRP protocol on NxOS platform.
- Tasked with hardening of EIGRP protocol to adapt cross platform solutions not present currently in NxOS platform.

Solid State Physics Laboratory, Defense Research and Development Organization (DRDO)
Summer Intern New Delhi, IND May 2012 – June 2012

- **Image classifier to discriminate land-cover classes –** Implemented as part of internship at SSPL, DRDO under Dr. S. Seetharaman. Outperformed their classifier at the time (91.2% vs 82% on their dataset)

PROJECTS

Maximizing Influence Spread in a Social Network

- Implementing Look-ahead propagation model to estimate the seed set in order to maximize influence in a social graph.
- Influence being modeled as a Gaussian distribution and being considered for two hop distance as oppose to only looking at the directly connected nodes.

MEETING.IO

- Developed a customized team task tracker web application in Dango for the NGO I was working with.

Web History Do-Over – A Recommender System

- Implemented a recommender system that recommends relevant articles by creating a user profile based on the type of articles visited and their frequency from user's internet history.
- Worked with a team of 3 over a period of four months to implement this from scratch.

Data Science Competitions

- Kaggle(multiple competitions) , Numer.ai, Informs(currently participating)

Music Genre Classifier

- Implemented a multiclass SVM classifier and k-NN classifier which used Information gain on GTZAN dataset.
- Learned about various machine learning algorithms and some of the signal processing techniques as part of it.

Sentiment Analysis of Twitter Data

- Analyzed tweets related to the 2013 FIFA confederations cup final.
- Compared change in fans emotions for a couple of players as match progressed.

Optical Character Recognizer

- Implemented as part of an online course on Coursera.
- Consists of a neural network classifier (97.48 % accuracy) and a CNN (99.2% accuracy) classifier. Uses MNIST dataset and is written in python where the latter uses Theano(haven't used theano after this project).

Tanks and SpaceWars

- Developed these games while learning python as part of a MOOC, uses easygui and simplegui.

SKILLS AND LANGUAGES

Languages, Platforms and IDEs: Python,C++, C, Lua, R, Octave, Linux, Windows, IntelliJ IDEA, Aanaconda, Eclipse
Machine Learning APIs: Scikit-learn, Tensorflow (learning), Torch (learning), Theano.
Frameworks and Engines: Apache Spark, Django
Miscellaneous: HTML5, CSS, Javascript, MongoDB, Microsoft Office Suite, Git Environment.