Rudra Saha

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Education

Master of Science, Computer Engineering (CS), *Arizona State University* 3.33 / 4.0 May, 2018
Statistical Machine Learning, Deep Learning, Foundations of Algorithms

B.Tech, Electronics Engineering, *Indian Institute of Technology, BHU, Varanasi* 3.60 / 4.0 May, 2014
Digital Signal Processing, Data Structures, Communication Systems

Skills and Languages

Languages, Platforms and IDE Python C++ C SQL Octave R Linux Windows IntelliJ IDEA Aanaconda Eclipse
Machine Learning & Other APIs Scikit-learn Numpy Scipy Pandas Tensorflow Torch (learning)
Frameworks and Engines Apache Spark Hadoop Django AngularJS
Miscellaneous HTML5 CSS3 Microsoft Office Suite Git

Work Experience

Active Perception Group, ASU
Graduate Services Assistant ASU, Tempe, AZ Jan 2017 - Present

- Working with Dr. Yezhou Yang on Generative Models for scene understanding and Disentangled Representation of Natural Images using a combination of Generative Advesarial Networks (GANs) and Autoencoding Variational Bayes (VAE).
- Implementing deep learning models on a Jetson Tk1 mounted on top of a turtlebot.

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

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

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

- **Project Lead - Predicting route failures in EIGRP protocol using temporal data –** Implemented an **anomaly detection** system to predict route failures on interface level of a router. Managed a 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 on the implementational aspects as part of **NMLRG in IETF-95**.
- **EIGRP Protocol** - Implemented new features and improved existing ones for EIGRP protocol on NxOS platform.
- Tasked with hardening of EIGRP protocol to adapt cross platform solutions not present currently in NxOS platform.
- Resolved bugs in EIGRP and RIP protocol.

Solid State Physics Laboratory (SSPL), 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

- Implemented 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 opposed to only looking at the directly connected nodes.

Meetings.io

- Developed a customized team task tracker web application in Django 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.

Music Genre Classifier

- Implemented a multi-class 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.