ELITA ASTRID ANGELINA LOBO

Email: loboelita@gmail.com
Ph no: 413-539-8473
Github: http://github.com/elitalobo
Blog: elitalobo.github.io
Linkedin: https://goo.gl/PsqoY

University of Massachusetts Amherst **Ms-PhD Student** **Sept 2018 - Current**

Advisor: Marek Petrik

Masters Project: Exploring S-Rectangularity Ambiguity sets for Robust and Safe Reinforcement Learning Algorithms

Perceptual Robotics Lab

Advisor: Rod Grupen

Worked on developing a Hierarchical Reinforcement Learning for generating robust and diverse skills based on maximum entropy framework. Tools: Pytorch, Mujoco

Also re-implemented Hierarchical RL via Weighted Advantage Information Maximization paper in pytorch.

Research Assistant for Center for Smart and Connected Societies

Advisor: Prashant Shenoy

Worked on peak days forecast for peak shaving in energy grid using **Deep Learning** (LSTMs and MultiLayer Perceptron). Used keras, pandas and python

Teaching Assistant:

Numerical Optimization 590OP, Reasoning Under Uncertainity , Operating Systems

Courses : Probabilistic Graphical Models, Reinforcement Learning, Convex Optimization, Algorithms (Spring 2020), AI (Spring 2020)

Flipkart **Software Engineer** **Aug 2017-July 2018**

Accounting 2.0: Onboarded Price Drop Event in accounting system. Contributed to the development of Inventory Valuation System and Invoice Register API. Provided on call support for Inter warehouse good transfer service and inventory valuation service.

Invalid Payout Detector: Developed a **Machine Learning model** based on order history and payout history that could detect wrong payouts made to sellers due to various bugs in the accounting system with 77% accuracy.

SL Generator: Developed an efficient Stock Ledger Generator for capturing a monthly snapshot of good movements between various warehouses along with the respective opening and closing quantity.

Endurance International Group **Backend Developer** **July 2016 - Aug 2017**

Webpro Panel: Developed webpro orchestration layer api. Built smart search for customers and orders. Integrated orderbox products in webpro panel. Developed apis for additional features like recent searches, expired orders, recent orders, pricing details,customer info. Developed session manager for Webpro Orchestration layer. Used Spring Boot, Elastic Search, Java & Redis.

Parked Domain Detection Service: Detects if a domain is parked with an accuracy of 98.2% using Random Forest Algorithm. Technologies used: Python, Nodejs, Pandas, Sklearn, Numpy

Imagio: Image recommendation Engine: Developed REST API for Imagio which is a web app that allows users to search trending images based on keywords and filter them by color and type. It used flickr, pixabay and bigstock as sources. The framework is built such that one can easily plugin any new source of images.

Indian Institute of Science **Part-Time Research Trainee** **Sept 2016 - March 2016**

MSR Codes: Worked on integration of minimum storage regenerating code developed by IISc team in Ceph. Technologies : C++, C Link : https://github.com/ceph/ceph/pull/15193/

GOIBIBO **Software Developer Intern** **May 2014 - July 2014**

CacheBot: Developed an intelligent framework called CacheBot that predicts time to live of each flights search result to be cached based on past analysis and current scenario, thus reducing the no of price invalidations that occur when user navigate from search results page to booking page. Used Python , Scikit-Learn Library, Numpy and Matplotlib, **Machine Learning**

Distributed Cache: Developed a Distributed In-Memory Cache wherein the servers in the network communicate using Bus Protocol. It can also effectively handle cases wherein a server goes down for a long time and then comes up again. Used Go and GoLeveldb.

HACKEREARTH **Software Developer Intern** **Dec 2014 – Jan 2014**

Implemented an interface for companies to add hackathon details, add/remove judges, view individual candidate scores, view individual candidate details, assign scores and view summarised hackathon report.

GOOGLE SUMMER OF CODE **Gnome Developer** **May 2014 - Sept 2014**

Worked on revamping the User Interface of Gnome-Calculator, implementing Keyboard Mode and History View . Gnome-calculator users can now view their previous calculations and reuse them. Used Vala and GTK+.

Machine Learning Pet Projects:

Logo Infringement Detection (Flipkart Hackday 10 project):

The goal of our hack was to provide proactive detection of fake listings and enable Flipkart to open marketplace to improve selection while still protecting customer's as well as seller's trust in 'Flipkart'.

We trained an in-house **Mask Region-based Convolution Networks model** which can detect logo infringement of 5 popular brands - Nike, Adidas, Puma, Reebok, Lotto with 88% accuracy and which can be extended to detect logo infringement of any other brand. This project won **1st place** and has been exposed as a Chrome plugin to facilitate easy use by Catalogue and Marketplace team.

Classification of Product Queries by Gender: (**Flipkart Machine learning Challenge 3**)

Developed a **stacked ensemble model** for classifying user queries into queries for male and female products using Random Forest Classifier, XGBoost Classifier, FastText, Count Vectorizer and TFID Vectorizer.

Unhealthy Inventory: (Machine Learning Challenge 3)

Flipkart stocks a lot of inventory in its warehouses anticipating future sales. However, not all inventory sells at the same rate. Some of this inventory remains in the warehouse even after considerable time has passed. Such inventory is labeled as unhealthy inventory.In this project, I developed a **ensemble model** which classified FSNs (unique id given to each type of stock) into health and unhealthy categories with 97% accuracy using Random Forests, GradientBoosting Classifier, AdaBoost Classifier, ExtraTree Classifier, Voting Classifier and Ensembling/Stacking. This project won **2nd place** and has been deployed in Flipkart.

FloorPlanning using Greedy Particle Search Optimization:

Developed an algorithm for efficiently minimizing floor planning area using a variant of PSO algorithm and Greedy approach. Implemented the code in C++.

Developed a system which detects Epilepsy in patients using Random Forest Classifier Algorithm:

Classifies EEG signals into 3 classes normal, ictal and interictal epilepsy with 98.6% accuracy using Wavelet Transform for feature extraction and Random Forest for feature reduction as well as classification.

Extracurricular Activities:

Solved Competitive Programming problems on Spoj, Uva Online Judge, Codeforces, TopCoder, Codechef mainly because it helps me improve my algorithmic skills and logical thinking. **Problem Setter** at **HackerRank**.

Research Publications :

Our paper titled `Clay Codes: Moulding MDS Codes to Yield an MSR Code` has been accepted for a USENIX Conference - FAST 2018. Link: https://fast18.usenix.hotcrp.com/paper/141?cap=0141akcG1Vc5fQ7E

Soft Option Critic framework submission accepted in WiML workshop

Achievements:

Recipient of UMass Robin Popplestone Fellowship in Robotics and Artificial Intelligence

Won **1st Place** in Hackday 10 (Marketplace Category) conducted by Flipkart.

Won **3rd Place** in ML Challenge 3 conducted by Flipkart

Won **1st Place** in Hackathon conducted by Endurance International Group

Won **2nd Place** in ML challenge 2 conducted by Flipkart.

Secured **98 rank** in Code Jam to IO for Women conducted by Google 2017

Secured Rank **372** in Google APAC 2016 Round B.

Secured **1st Place** in Trickology (Coding Event) conducted by Department of MCA at NIT Durgapur.