

# Sharan Srivatsa

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## EDUCATION

### CU BOULDER

**MS IN COMPUTER SCIENCE**  
Expected May 2019 | Boulder, CO  
Cum. GPA: 4.0/4.0

### PES UNIVERSITY

**BE IN COMPUTER SCIENCE**  
Sep 2011 - Sep 2015 | Bangalore, India  
Major GPA: 9.05 / 10.0

## COURSEWORK

### GRADUATE

Natural Language Processing  
Design and Analysis of Algorithms  
Machine Learning  
Database Systems  
Big Data Architecture

### UNDERGRADUATE

Cloud Computing and Big Data  
Data Structures and Algorithms  
C, Java, Python, Unix, PHP  
Database Systems  
Operating Systems  
Software Engineering  
Object Oriented Modeling and Design  
Web Technologies, AJAX, HTML, CSS

## SKILLS

### PROGRAMMING

Proficient  
Python • Java • C •  $\LaTeX$   
Familiar  
CSS • PHP • Shell Script • C++

### TECHNOLOGIES

Hadoop • Openstack • Numpy • Spring • Tensorflow

## LEADERSHIP

### HADOOP ON OPENSTACK

Advisor: Dr. Dinkar Sitaram | April 2013  
Technologies used: Hadoop, Openstack, Python, Ganglia  
Led a team of fifteen members on a project which involved autoscaling of Hadoop nodes in an Openstack environment based on the number of pending Hadoop map and reduce tasks

## ONGOING PROJECTS

### SEARCH ENGINES

Advisor: Prof. Greg Greenstreet | March 2018  
Technologies used: Hadoop, Cassandra, Python, NLTK, Bootstrap, CSS, HTML, Apache, AWS  
The project aims at building a search engine for twitter data. The objective is to convert Natural Language Queries entered by users to Cassandra queries, which result in top tweets for the query presented. The search and data framework are setup on Amazon Web Services(AWS) and results are displayed on a web framework. Accuracy and Performance measures will be measured by benchmarking against the Twitter API.

### NEURAL STYLE TRANSFER

Advisor: Dr. Christian Ketelsen | March 2018  
NLTK, Scipy, Tensorflow, ScikitLearn, Machine Learning, Image Processing  
The process of using CNNs to migrate the semantic content of one image to different styles is referred to as Neural Style Transfer. The aim of the project is to build generative and descriptive models using VGG for generating image representations. In the descriptive model, the idea is to update pixels in the (yet unknown) stylized image iteratively through backpropagation, which starts from random noise. In generative model however, we first optimize a model iteratively and produce the styled image through a single forward pass. The project aims to provide similar results to apps like Prisma, Ostagram, Deep Forger or Google's Deepdream.

### MEASURING A CASSANDRA CLUSTER

Advisor: Dr. Frank Miller | March 2018  
NTP, Cassandra, Docker, Linux, VM  
This project focuses on measurements across a Cassandra cluster for various topologies. We are particularly interested in measurements of latency and clock skew. The topologies consist of different arrangements of VMs, containers and physical hosts.

## EXPERIENCE

### SCIBLER | SOFTWARE ENGINEER

June 2015 - Jan 2017 | Bangalore, India

- Scibler is a start up based out of Bangalore with operations in Santa Clara, USA with a focus on Machine Learning and Data Mining. The company provided AI powered solutions for interpreting user email. Scibler is now rebranded as frontend.ai.
- Built a entity extractor, intent detector and a response generator for the text based Scibler Chatbot.
- Involved in setting up frameworks for collaborative training of data for existing classifiers to enhance its performance.
- Involved with using Support Vector Regression to learn a model to prioritize a user's tasks, based on Contact Importance.

### SCIBLER | SOFTWARE ENGINEERING INTERN

Jan 2015 - May 2015 And Jun 2014 - Aug 2014 | Bangalore, India

- Researched various existing time detector technologies and integrated Stanford's SUTime with the Scibler pipeline.
- Concluded that Scibler needed a stand alone time detector framework and started work on the same.
- Built a regex based time detector which extracted and interpreted time patterns from textual email data. The system achieved an 80% recall better than SUTime. The implementation is currently being patented.
- Involved in various marketing tasks during Tech Crunch to keep the app trending, there by increasing the effective reach of the app.

## PROJECTS

### COMPARATIVE STUDY OF STATISTICAL AND GRAPH BASED RECOMMENDATION SYSTEMS |

ADVISOR: PROF. ASHUTOSH TRIVEDI | AUGUST 2017 - DECEMBER 2017

Technologies used: Python, SKLearn, Scipy, Numpy

- The project is aimed at understanding various recommendation systems currently available - both machine learning based and graph based so as to identify use cases for each kind of system.
- We investigate statistical recommendation techniques based on collaborative filtering(user and item based). The addition of content and context is also evaluated through Bayesian models with algorithms like Probabilistic Matrix Factorization.
- We aim to fabricate a graph based recommendation system for movie data based on motivation from social networks.

### CHAT BASED AUTOMATED SALES ASSISTANT | ADVISOR: Prof. Anantharaman P.N. | APRIL 2015

Technologies used: Machine Learning, Natural Language Processing, Python, NLTK, MySQL

- Used Python to design a chatbot to understand and answer natural language queries about mobile phones.
- The project involved building a Named Entity Recognizer using the Hidden Markov Model. A Relationship Entity Extractor was build using the Viterbi algorithm and finally a natural language response generator which converted the resultant query into natural text.

### FRAMEWORK FOR HIGH AVAILABILITY OF APPLICATIONS | ADVISOR: Prof. Phalachandra H.L. |

APRIL 2015

Technologies used: Unix, C, HTML, Javascript, Bootstrap, PHP, CSS, Ajax, Python, Linux,  $\LaTeX$ , Spring, Shell scripting

- Developed a framework on top of which applications could be written with assured availability and stateful restart so that it can run without any visible interruptions.
- Minimum downtime, heartbeating mechanism and stateful restarts were some of the key aspects of what the project handled.
- This framework was written in C and built in the Unix Environment. POSIX Compliance was assured as much as possible.