

# Vishwanath Seshagiri

DEVELOPER · TECH ENTHUSIAST · SYSTEMS RESEARCHER

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## Summary

Today's world is extremely impatient, and wants everything to happen in the smallest possible time. Even milliseconds of delay, has them frowning at their screen, diluting their experience with the product. My long term research goal is to turn that frown upside down by delivering the content at the fastest possible time. To achieve this goal, my research broadly focuses on the areas of Workload Characterisation and Distributed Caching.

## Education

### Emory University

PHD IN COMPUTER SCIENCE

Atlanta, USA

Aug. 2019 - Exp. 2024

- Working with Simbiosys Lab - Systems Group with a focus towards Workload Characterisation and Distributed Caching.
- Lab PIs: Dr. Avani Wildani, Dr. Ymir Vigfusson

### College of Engineering Guindy, Anna University

B.E. IN COMPUTER SCIENCE AND ENGINEERING

Chennai, India

Jul. 2014 - Jul. 2018

- Founding Member of Quizzers Anonymous, The official quiz club of the university.
- Served as Student Director of CEG Tech Forum, the Technical Club of CEG.
- Undergrad Thesis Supervisor: Dr. A.P. Shanthy

## Work Experience

### Emory University

TEACHING ASSISTANT

Atlanta, USA

Sep. 2019 - Present

- Fall 2019:** Teaching Assistant for Dr. Ymir Vigfusson's Security Course.
- Spring 2020:** Teaching Assistant for Dr. Avani Wildani's Algorithms Course.

### UMM Digital

PYTHON DEVELOPER, DATA ENGINEER

Chennai, India

Sep. 2018 - Present

- Working on a Portal for aggregating customer reviews from various social platforms, and understanding them.
- Using Celery for Review Aggregation, and Spacy for Extracting Information from the Reviews.
- Experimented with RAFT Consensus Algorithm, during server failures.

### Warhorse

CODING COURSE TRAINER, BACKEND DEVELOPER

Chennai, India

Aug. 2017 - June 2018

- Structured and Taught Coding Course during Summercamp.
- Worked on a Learning Management Platform to help the students learn courses at their own pace.
- Implemented Collaborative Filtering based Recommender System for Test Taking Module of Warhorse.

### Waran Research Foundation

RESEARCH TRAINEE

Chennai, India

July 2015 - March 2016

- Worked on Supercomputer Benchmarking Algorithm
- Implemented the Algorithm in C++, and tested on in-house simulator.

## Projects

### Workload Clustering for Storage Optimization

TO APPEAR IN 18TH USENIX CONFERENCE ON FILE AND STORAGE TECHNOLOGIES (FAST) 2020 [WiP TALK]

Atlanta, USA

Aug. 2019 - Present

- Extracted multiple block-level features from Cloudphysics and MSR Traces
- Performed Exploratory Data Analysis, and Hierarchical Clustering on the data set to identify similar workloads
- Evaluated the generated clusters using Hit Rate Curves to identify which clusters gave the best hit rate curves

### YouTree: A Visualization Paradigm of Statistically and Textually Similar Videos

APPEARED IN ACM Proceedings for The 7th International Conference on Intelligent Computing and Applications

Chennai, India

Aug. 2017-Sep. 2017

- Configured Data Pipelines for Aggregating 500,000+ data points using YouTube Data API.
- Performed Exploratory Data Analysis, and tf-Idf on the data obtained to identify the topics discussed, and further found cosine similarity based on content
- <https://gitlab.com/thebrahminator/Youtube-View-Predictor>

### **TweetIt: Analyzing Topics for Twitter Users to garner Maximum Attention**

Chennai, India

APPEARED IN **ACM Proceedings for 2nd International Conference on Machine Learning and Soft Computing**

Sep. 2017-Nov. 2017

- Obtained the Tweet Data based on the Hashtag, and profiled it to understand the psyche of the user.
- Wrote an indexing algorithm for clustering the user profiles based on similar topics in their tweet.
- Compared the topics with trending topics retrieved from BBC News API, and wrote an algorithm to rank the users in political domain.
- <https://gitlab.com/thebrahminator/Twitter-Topic-Detection>

### **A biologically plausible network model for pattern storage and recall inspired by Dentate Gyrus**

Chennai, India

APPEARED IN **JOURNAL OF NEURAL COMPUTING AND APPLICATIONS (2020)**

Aug. 2017 - Present

- Implemented the Pre-Integration and Lateral Inhibition taking place in Dentate Gyrus, and interfaced it with Hopfield Networks.
- Refactored the codebase to make it process matrix with order in the millions parallelly.
- Continue to work on the CA3 region, by making use of Python's Parallel Processing Libraries.
- <https://gitlab.com/thebrahminator/hippo-dg>

### **Multi instrument music track generation using GANs**

Chennai, India

FINAL YEAR UNDERGRAD THESIS

Dec. 2017 - March. 2018

- Implemented a GAN for Music Generation based on MuseGAN
- Suggested enhancements on the existing model, which were incorporated into the original repository.

### **Dalalbull: A Fuzzy Logic Based Stock Market Simulator for Behavioural Analysis**

Chennai, India

USED FOR CONDUCTING AN EVENT "DALA BULL" AS A PART OF UNIVERSITY'S TECHNICAL FEST. KURUKSHETRA

Dec. 2016-Jan. 2016

- Built the application in Python (Flask) with Redis DB, for giving introduction to Stock Market for Laymen.
- Wrote an algorithm for generating the news based on Fuzzy Logic and used Weiner Process to determine the price fluctuations of a stock at any given point of time.
- Regulated the transactions based on current state of news and ticker price, and configured pipelines to handle a load of more than 200 concurrent requests.
- Developed an RNN for generating news, trained it on Economic Times, and Business Line Dataset.

## **Responsibilities Held**

### **CEG Tech Forum**

Chennai, India

STUDENT DIRECTOR

Apr. 2017 - Apr. 2018

- Headed the Industrial Relations committee of my university's Technical Forum
- Responsible for integrating Industries' needs and projects that are done by students, and worked on industrial grade projects involving data science and machine learning

### **CEGLUG (CEG LINUX USERS GROUP)**

Chennai, India

CORE MEMBER

Aug. 2015 - Present

- Took classes on latest technologies for students of the university.
- Worked on multiple projects, and guided students in the same. Responsible for teaching 6 developers students.

### **Quizzers Anonymous, Quiz Club of CEG**

Chennai, India

FOUNDING MEMBER AND EXTERNAL RELATIONS HEAD

Jan. 2015 - July 2018

- One of the founding members of the club, aimed at imparting wide range of knowledge to different sections of the college.
- Proposed various marketing and network activities to raise awareness, along with getting industry support for executing these activities.