Aditi Srinivas
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Education

- **PES University** — Bangalore, India
  B.Tech in Computer Science; CGPA: 9.49 — *Aug 2015 - Aug 2019*
- **National Public School** — Bangalore, India
  CBSE Grade 12; 94.2% — *June 2013 - March 2015*
- **National Public School** — Bangalore, India
  CBSE Grade 10; CGPA: 10 — *June 2012 - March 2013*

Experience

- **PES University** — Bangalore, India
  Teaching Assistant - Big Data — *August 2018 - Present*
  - **Description**: Teaching Assistant for the Big Data course offered at PES University, Bangalore for 3rd year Computer Science and Engineering students.
  - **Responsibilities**: Collaborating with the professors in planning assignments and helping in the evaluation for the same whilst checking for plagiarism would be the focal point of my work here as a Teaching Assistant. Helping the students understand the course better and providing them with help in the form of references, installations and fixing misconfigurations, explaining concepts, etc are a few of the other tasks.
  - **Outcome**: Understanding a professor's perspective and going above and beyond the course material to craft assignments that require a great deal of thought and understanding of the subject and also improving interpersonal skills by working with professors and fellow TAs to help make the course more robust and clear for the students.
- **IBM India Pvt Ltd** — Bangalore, India
  Software Development Engineer Intern — *May 2018 - August 2018*
  - **Spark History Server Performance Analysis**: Determine the optimal resources in terms of memory and CPU required to deploy the spark history server and analyse the difference in performance when history server events are loaded from local file system and when loaded from COS (Cloud Object Storage) mounted using FUSE driver.
  - **Cluster Capacity Analysis**: Enable the collection of timely updates of a Kubernetes cluster capacity, defined in terms of number of instances that can be provisioned given the pod requirements, and report metrics which indicate the same and define alerts accordingly.
  - **End-to-end Tests using Jupyter Kernel Gateway**: Scripts, Dockerfile and Kubernetes configurations required to conduct an end-to-end, i.e create a kernel, connect to a websocket, execute the given code and delete the kernel, and report metrics regarding the time taken and status for each for the different environments of Hummingbird Prod and define alerts accordingly.
  - **Microservice for spark history server**: An API endpoint that brings up the spark history server on demand and mounts the COS (Cloud Object Storage) bucket using FUSE driver. This is written as a part of the deployment service in the Hummingbird Prod.
  - **Outcome**: In depth understanding of cloud technologies like that of Docker, Kuberenetes, IBM Blumix, COS, Amazon EC2 and S3 instances and other technologies like Fluentd, Nginx and Spark. Significant code contributions to the end product, Hummingbird.
- **Center for Cloud Computing and Big Data** — Bangalore, India
  Research Intern — *June 2017 - May 2018*
  - **Container Intrusion Detection**: A real-time, hybrid intrusion detection system built for container security in a cloud environment to detect and report anomalous activity.This project required the intimate use of Docker, Kubernetes, Apache Kafka, ELK Stack, IBM Blumix and several other software for experimenting and developing a good system.Our IDS aims to provide not only a secure environment for containerized applications, but also measures to try and prevent any damage in such situations by providing a set of standard/predefined countermeasures for different types of applications using out custom built application detector mentioned below
  - **Application Detection using machine learning**: A tool built using python to recognize the applications running within a given environment using Machine learning and in particular Self Organizing maps.
  - **Outcome**: Currently working on obtaining a patent on the same.

Programming Skills

- **Languages**: C, Python, Java, JavaScript, C++, R, PHP, HTML, CSS and Rust.
- **Technologies**: AWS, Docker, Kubernetes, IBM Blumix, IBM COS, OpenStack, Hadoop, FUSE, MySQL, MongoDB, Arduino, Node-Webkit.
- **Domains**: Cloud Computing, Computer and Network Security, Machine Learning, Systems Programming, Big Data.

Research

- **Domain independent method for detecting significant events using non linear time series analysis**: Ongoing research project under Dr. Dinkar Sitaram at PES University, Bangalore.

Projects

- **MyFS**: A Unix file system in userspace built using FUSE.
- **Bitmap4Rust**: A Rust library for creating and manipulating bitmaps.
- **RusticSom**: A Rust library for self organising maps.
- **Pod**: A minimalistic shell build using C.
- **Crypto-Vinaigrette**: A quantum resistent asymmetric key generation tool.
- **BrewTE**: A minimalistic terminal based text editor.
- **Xv6-with-scanf**: Scanf functionality using File I/O for the xv6 operating system.
- **Brownie Points**: A custom blockchain based cryptocurrency.
- **Bitcoin-price-predictor**: An application that attempts to predict the closing price of a Bitcoin one day ahead of time
- **Data Compression and Decompression**: A compression tool built using advanced algorithms like Burrows-Wheeler Transform and LF mapping, complete with a GUI.
- **ARMulate**: Desktop application that simulates the working of an ARM processor.
- **Tempstagram**: A naive web app that creates an environment on the cloud for sharing photos similar to Instagram.
- **Pokerman**: An application built using python tensorflow to predict poker hands.
- **Gesture Controlled Car**: A miniature robot car, controlled via a gesture control system powered by an Arduino

Other skills, Interests and Achievements

- **Soft skills**: Outgoing person with good communication and leadership skills. Elected president of Eco Health and Wellness Association at National Public School, Rajajinagar, Bangalore and elected captain of the school badminton team.
- **Competetive Programming**: Enthusiastic about competitive programming, problem solving and contributing to open source software. Hackerrank - Earned medals in the algorithm domain (Username : aditisrinivas)
- **Scholarships**: Awarded Prof. CNR Rao Scholarship for being amongst the top 20% in the year 2015-2016, 2016-2017 and 2017-2018 at PES university.
- **Hobbies**: Music - Participated and won in many Carnatic classical singing competitions and completed the Carnatic junior exam and secured 90%. Represented school and college in a number of competitions as the lead singer of a band (western music). Other hobbies include reading and travelling.