Akshat Sinha

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Education

University of Wisconsin-Madison, Madison **Jan. 2021 – Dec 2022**
Master of Science in Computer Science *GPA, 4.0/4.0*
Teaching assistant: Introduction to Operating Systems

Indraprastha Institute of Information Technology, Delhi **Aug. 2014 – May 2018**
Bachelor of Technology in Computer Science *GPA, 8.76/10.0*

Experience

Media.Net (formerly Directi) **June 2018 – Dec 2020**
Site Reliability Engineer *Mumbai, India*

- **Infrastructure Security**: Developed system level vulnerabilities detection pipeline using tools such as Wazuh, ElasticSearch and Flask (web-interface). Detected and fixed 1000+ system level (per server) vulnerabilities due to the presence of old and outdated packages.
- **Resource Orchestration**: Deployed and maintained workload orchestrator using Nomad and Kubernetes. Successfully migrated 10+ legacy applications to containerized environment(Nomad), without downtime. Also, deployed a new application on Kubernetes cluster. Migration to both Nomad and Kubernetes cluster helped in better utilization of our physical resources by 50%(approx).
- **Monitoring and Metrics Infrastructure**: Created Prometheus monitoring pipeline for containerized systems deployed on Nomad and Kubernetes. Managed multiple legacy monitoring and alerting systems such as Nagios, Icinga2, Graphite and Pagerduty.
- **Infrastructure Management**: Used Puppet extensively to deploy and automate infrastructure management. Deployed Redis, Hadoop, and Kafka cluster(s) for data team. Created CI/CD pipelines using Jenkins for both non-containerized and docker based applications.

Publications

Analyze Web Censorship Mechanisms in India | *Network packet capture* **May 2017- May 2018**

- Characterized web censorship mechanism in India, identified several disparity in technology used, number of sites blocked and coverage of censorship (percentage of subscribers affected) between major ISPs of India.
- Published: Where The Light Gets In: Analyzing Web Censorship Mechanisms in India, **IMC 2018**

Brain MRI Segmentation | *Machine Learning, Computer Vision* **May 2016 – Aug 2016**

- Segmentation of the 3D volume image (from brain MRI scans) into four Region of Interest using a novel deep neural network. Trained model using a mix of healthy and diseased subjects, reported an accuracy of more than 94 percent.
- Published: Deep neural networks for segmentation of basal ganglia sub-structures in brain MR images, **ICVGIP 2016**

Projects

Detection of stalk-ware apps in Android App Stores | *Machine Learning* **Jan 2021- Aug 2021**

- Achieved 70% accuracy in identifying stalk-ware apps from benign apps crawled from different android app stores using different machine learning techniques such as decision tree, random forest and logistic regression.

UW Study Circle Application | *Python, Flask, Swagger-UI, Socket.io* **Jan 2021- Apr 2021**

- Created a web-app for students of UW-Madison to collaborate on different projects and form a study group. The students could join/create a group and chat with different students on the same group. Designed and implemented the backend in flask framework, with chat feature on socket.io using formal software engineering principles such as agile development, code review, unit testing, etc.

Technical Skills

- **Languages**: Python, C, Bash, Java
- **Web Technology**: Flask, Swagger-UI, Socket.io, Django, Redis, MongoDB, MySQL
- **Tools**: Linux, Docker, Kubernetes, Nomad, Consul, Puppet, Hadoop, Spark, AWS, GCP, Git, Grafana, Kafka, Prometheus, Graphite, Jenkins, Icinga

Award/Scholarship

- CS Departmental Scholarship worth $3000 for two semesters at University of Wisconsin, Madison.
- Guaranteed financial funding for pursuing Masters at University of Wisconsin, Madison.