Ameya Shenoy

Software Engineer

Mumbai, India

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"A generalist with multi faceted interests and extensive experience with System Design and Full Stack Development, leveraging technologies like Python, Django, React, Docker, Kubernetes, Amazon Web Services, Postgres, Redis"

Work Experience

e-Yantra, Indian Institute of Technology Bombay

Mumbai, India

Project Engineer

Apr. 2021 - current

- Currently working on setting up a general purpose drone platform. The project envisions using a plug and play type of system, which can be used with something simple as a Raspberry Pi 4, or something powerful as a Nvidia Jetson AGX as its on-board computer, with more modules like ZED stereo camera and GoPro for vision, GPS and optical flow sensor for position estimation, all of which would be integrated using ROS for easier message passing and processing. The software side of the stack is intended to be used for aggregating flight data, view real time video feed from flights, run photogrammetry pipelines on the cloud and potentially autonomous navigation with the help of stereo vision
- Setup a framework for secure remote access and manipulation of a UR5 robotic arm using ROS multisystem under a constrained network environment, while also providing live video feeds to ease the feedback loop of manipulating the robotic arm
- Architectured and created an app for running simulations and evaluating them within containerzed environments for security, isolation and reproducible results
- Working on a framework for slicing NVIDIA GPUs and distributing it across multiple virtual machines, for efficient utilization of GPU resources, to be used for training machine learning models, or to be used as remote workstations running linux, accessible via the browser

BrowserStack

Mumbai, India

Cloud Infrastructure and Security Engineer

May. 2019 - Mar. 2021

- Worked on implementation of CIS Controls to improve the organization's security posture
- Lead on a project to centralize emails originating across the servers, and to improve the DMARC rating of our main domain to 99.54%
- Reduce AWS expenditure for a yearly million dollar bill by 15%, via optimal purchase of reserved instances for EC2, RDS, scripting deletion of unused Snapshots, AMIs and applying appropriate life cycle policies on S3 buckets
- Executed a mock for migrating all critical infrastructure from AWS to DigitalOcean, as a part of Disaster Recovery Plan for the Company
- Setup VPN for data centers and privatized all data center components to enhance security, to cut down on IPv4s addresses used
- Worked on setting up Jenkins on Kubernetes, to version control all pipelines, jobs and to implement auto auto scaling on AWS resources
- Planned and successfully executed critical database and infrastructure migrations with minimal to no downtime for 99.9% product uptime SLA
- Worked on setting up Cloudflare to enhance security and help protect against DDoS attacks, while also decreasing page load times by a factor of 3
- Wrote multiple Nagios plugins for setting up alerting on AWS RDS, product error rates and Cloudflare 5XXs

Frappe Technologies Pvt. Ltd.

Mumbai, India

Software Engineer - Research and Development

Jun. 2017 - Nov. 2018

- Worked on Frappe Framework, an open source full-stack web application framework which powered one of the world's largest Open-Source ERP Systems, that uses Python for the backend, a tightly integrated client side library in JavaScript (NodeJS) for the frontend, MariaDB for persistent data storage with Redis and Socket.IO for PubSub and data caching
- Implemented email tracking pixel in outbound mails
- Spearheaded development of the Agricultural Module and Shareholder Module in ERPNext
- Managed releases and deploys of Frappe and ERPNext to GitHub and ERPNext Cloud respectively, with minimal to no downtime
- Structured automated installation of Frappe Framework and ERPNext on a server using Ansible, and auto creation of VirtualBox, Vagrant and VMware Images for ERPNext using HashiCorp Packer
- Authored, Bench Manager, a graphical user interface to monitor and modify sites hosted on the Frappe Framework using Socket.IO to stream commands in real time from the application backend and presented the same at the ERPNext Conference
- Set up an email server with configurations for DMARC, SPF, DKIM to prevent email spoofing and ensure email authenticity

Education

St. Francis Institute of Technology, Mumbai University

Mumbai, India

Bachelor of Engineering in Electronics and Telecommunication

Jun. 2013 - Nov. 2017

- **Relevant Coursework**: Image and Video Processing, Data Encryption and Decryption, Internet and Voice Communication

Skills and Proficiencies

Programming Languages	Python, JavaScript, C++, Ruby, Golang
DevOps	Ansible, Docker, Kubernetes, Linux/UNIX, Vagrant, VMware ESXi, Terraform, Bash, NGINX, Packer, HashiCorp Vault, MySQL, MariaDB, Redis, Jenkins, KVM, LVM, LUKS, LXC/LXD, Nagios, Prometheus, Grafana, InfluxDB, VirtualBox
Cloud Providers	Amazon Web Services (AWS), Microsoft Azure, DigitalOcean, Scaleway, Hetzner, Cloudflare
Web Frameworks	Flask, Django, VueJS, ReactJS, React Native, Gatsby, OpenCV, Serverless Framework, Frappe Framework
Robotics	Robot Operating System (ROS)
Spoken Languages	English, Hindi, Marathi, Konkani

Personal & Open Source Projects

Krita Artists Discourse

Co-Maintainer

- A discourse community which acts as a central hub for Krita artists, developers and enthusiasts, with over 10K daily consolidated page views.

Dockerized FAHClient

Author

- Dockerized Folding@home client with NVIDIA GPU support to help battle COVID-19, with over 80K downloads on Docker Hub.

CS 747

Author

- CS 747 is a course on Foundations of Intelligent and Learning Agents offered at IIT Bombay. I'm currently learning the fundamental concepts of the course in an attempt to better my knowledge about game theory and reinforcement learning. At the time of writing this I've completed week 1 of the course and built up a small front end application to condense my learnings with some visualizations.

Extracurricular Activities and Interests

Drone Enthusiast

Personal *2020 - current*

- I'm a big time drone enthusiast and I've assembled a fully functional micro sized drone which I use for clicking aerial shots.

Blogging

Personal *2020 - current*

- I host a technical blog with 1.6k monthly unique visitors, where I share the knowledge which I've accrued. This helps me deepen my knowledge on the subject matter to ensure good writing, while also increasing my competency with regards to the web technologies involved for maintaining the blog.

Mumbai Hackathon

ERPNext Foundation

1st Place *2017*

- Secured the 1st place, all over Mumbai, out of 50 teams, by building a Python hand gesture recognition library for Kinetic User Interface.

RAW (Robotics and Automation Wing)

St. Francis Institute of Technology

Core Member *2015 - 2017*

- Developer on the college core team which secured 26th rank in India amongst 108 colleges, for the RoboCon Competition (2016).
- Gained expertise in hardware engineering, areas related to Microcontrollers, Motor Drivers, Arduino, Raspberry PI, etc.