Roopak Srinivasan

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Education

Cornell University, *Master of Engineering, Computer Science*   Ithaca, New York
Coursework: Computer Graphics, System Security, Distributed Computing, Theory and Practice of Leadership   *August 2023 - May 2024*

M S Ramaiah Institute of Technology, *Bachelor of Engineering, Information Science*   Bangalore, India
Best Outgoing Student; Coursework: Information Security, OOP, Networks, Software Engineering   *July 2015 - June 2019*

Skills

Languages	Python, JavaScript, Typescript, Java, SQL, Bash
Frameworks	Django (2+), Flask, NodeJS (12+), FastAPI, React (NextJs), Vue (2, 3)
Tools	Git, Mulesoft, Oracle Data Integrator, Tableau, CyberArk, Jira, Jenkins, Gitlab, Webex Bots, Splunk,
Storage	*DB*: Postgres, PostGIS, Oracle, MongoDB, Firestore ‖ *BLOB*: S3, Minio
Platforms	AWS, GCP, Docker, Firebase, Linux (Debian), Unix, CentOS, Windows, Rasbian, ContainerD, K8s, Elastic-Logstash-Kibana
Libraries	GraphQL, Celery, Redis, MapBox, Cesium, Rasterio, GDAL, Agisoft, OpenCV, PyQT5, CuraEngine, ThreeJS, Mavproxy, Potree

Relevant Experience

Dexterity AI - *Software Engineer II - Contract (dexterity.ai)*   *July 2024 - Oct 2024*
- Developed a real-time communication adapter to sync the state between the robot decision control loop and vendor systems for task coordination.
- Developed diagnostic control loops for the EtherCAT and robot app stack to test and validate peripherals such as lights, fans, alarms, and sensors.

Skylark Drones - *Senior Full Stack Engineer (spectra-insights.com)*   *July 2021 - July 2023*
- Developed GIS (Geographic Information System) algorithms to compute and analyze mining-centric insights such as compliance deviation, volumetric changes, and surface model analysis using 3D GeoTiffs, Vectors, Point Clouds, and Meshes.
- Built RESTful Microservices on AWS (EC2/ECS/Fargate/Lambda, and CloudFront functions) to perform distributed GIS operations on the cloud, reducing processing times by a factor of 5 compared to on-premise machines.
- Designed and Implemented cloud-native data delivery workflows to enable seamless interaction with bandwidth-intensive data formats such as vectors, rasters, 3D models, and terrains on a web browser through techniques like pagination, tiling, and Level Of Detail (LOD) definition.
- Spearheaded the mission of securing SOC 2 and ISO 27001 security compliance certifications for the SAAS platform. Ensured continual security stature of the product in the areas of firewalls, patching, password rotation, key management, VPS, Proxies, etc.
- Managed the Cloud and On-premise product infrastructure w.r.t to release pipelines, CI/CD workflows, logging, monitoring and alerting
- Analyzed and Translated client requirements and use cases into UI/UX experiences on 2D (Mapbox) and 3D (Cesium) maps.

Makerzhub Pvt. Ltd. - *Co-founder and CTO (makerzhub.com)*   *May 2020 - July 2021*
A cloud-based 3D printing marketplace for small and medium businesses
- Developed the real-time pricing and print time estimation algorithms, forming the venture's technical foundation and Unique Selling Point.
- Bootstrapped the proof of concept web stack (Flask - GCP - React) and conducted a stealth launch to test the product market fit.
- Outlined the MVP roadmap and led the full-stack development effort with a team of 6 engineers and UI/UX designers.
- Conducted product demos and customer feedback sessions, to pivot product features and drive the platform adoption.
- Through successful implementation of first-mover features, grew to a scale of 300+ printers, processing 50+ price quotes on the best day.

Akamai Technologies - *Software Engineer 2 @ App Architecture and Integration Services*   *Feb 2019 - July 2021*
- **ETL Development:** Created scalable and reusable data pipelines for Business Intelligence and reporting using Oracle Data Integrator (ODI), PLSQL, and database procedures adhering to Data Warehousing principles.
- **API Development:** Built REST APIs based on the Service Oriented Architecture (SOA) using the Mulesoft platform to deliver integrations such as data sync, event capture, status broadcasting, and log forwarding between internal applications and cloud services.
- **Automation**: Identified time-intensive tasks related to release workflows and developed bash/python automation resulting in a 50% time reduction in release duration; Developed frameworks and templates for ODI and MuleSoft to boost developer productivity and reduced the feature turnaround time by 80%. Revamped legacy manual release processed into CI/CD workflows through git hooks for code development across dev, staging, and prod.

Additional Experience

Trailwise *(trailwise.in) : Personal Project*   *Oct 2023 - Present*
- An initiative to empower hiking agencies to provide comprehensive route details for their customers to boost bookings and clarity on routes.
- Integrated with Indiahikes (Ex: 3D trail - Dayara Bugyal) and Karnataka Eco Tourism.

Utech - Urban Planning and Mobility Systems: *System Design*   *Aug 2023 - Aug 2024*
- Developed Data Ingestion pipelines for loading geospatial data from OSM, TIGERLines, Overture, and Shapefiles to a real-time geospatial database.
- Experimentation and analysis of spatial mergers of road networks from multiple sources using Apache Spark and Apache Sedona.
- Built CI/CD automation (Github Actions, Cron Jobs) and monitoring systems (SupervisorD, ELK) to ensure the real-time status of the pipelines.

Edhitha - Un-manned Aerial Systems Team: *Software Lead*   *June 2016 - Aug 2018*
- A club dedicated Dedicated to the mission of developing and enhancing UAVs (Copters, Fixed-wing planes) for search and rescue missions.
- Developed navigation, tracking, and control systems for the Ground Control Station requiring socket programming and GUI development using Python. Implemented image-processing pipelines based on OpenCV and Tensorflow within the compute and power limits of the On-Board-Computer.
- Captain the team for the 2018 AUVSI SUAS competitions in Maryland, USA. Secured 10th place Internationally (Media Report).