

**Edara Venkata K**

Lead Backend Engineer

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I am an IIT graduate with 12 years of experience working in a fast-paced start up environment, where individuals take ownership of projects. I had chance to develop applications across various platforms using multiple languages and frameworks. I was the first employee in one of the organizations and I was integral to the growth of the organizations, I have been part of. I'm proactively looking for backend and platform software engineer roles, with Golang and Java as my preferred languages.

## Education

**Indian Institute of Technology, Kharagpur**

**May 2011**

Bachelor of Technology (Hons.) in Agricultural and Food Engineering. CGPA 7.24/10

## Skills

**Languages Used:** Golang (3yrs), Java (4yrs), C++ (3yrs), C, C# (1yr), objective C, Nodejs, ActionScript, Intel x86 and Arm Cortex Neon Assembly

**Cloud Technologies:** GCP based Kubernetes, Compute, Artifact registry, BigQuery, Pub-sub, Secret Manager, Network, DNS and Firewall services, Docker, HashiCorp based Terraform, Consul and Nomad tools, Helm charts, Envoy proxy service mesh, Git CI/CD, Jira, Confluence.

**Tools:** Sonarqube, Checkmarx, Grafana, Wireshark

**Databases:** MySQL, Kafka, Cassandra, Mqtt, Ectd, Badger db, Aerospike.

## Work History

**HDFC Bank**

**Lead Backend Engineer (GoLang) | May 2023 – May 2024**

### Synopsis

Had a chance to lead a team where I was responsible for code quality, task delegation, release notes and collaborating with other teams. Led Registration and Common Modules Team, in-house mobile banking app team, as part of Enterprise Factory.

### Customer Registration

- Implemented registration flow for customer onboarding through MFA using customer's mobile number and implemented registration throttling to support NPCI guidelines.
- Added support for multiple VMNs and different country coded RMNs in registration. Worked with VMN provider vendor to setup VMNs for different app environments.
- Added transaction logging for transaction bookkeeping and AEM supported enriched errors.
- Been part of deployment work for SIT, UAT, Pre-prod and CUG environments.
- Used Gorilla Mux, **Aerospike**, **GRPC**, Kubernetes, Checkmarx, Sonarqube, Jira, Confluence.

### Common Modules

- responsible for implementing common tasks across the mobile banking app teams.
- Developed black-out, implemented AEM event handling and admin event handling.
- Collaborated closely with infra team, to fine-tune server configurations and deployment scripts, and with performance testing team to fix data consumption related issues.
- Used Google **pub-sub**, **Secret Manager**, **BigQuery**.

**Intellicar Telematics**

**Sr. Software Engineer | Feb 2021 – April 2023**

### Synopsis

My work revolved around building new platform. Most of the things like GCP Cloud, Kubernetes, Google SDK modules, Golang, Docker or HashiCorp tools, I have picked up myself from scratch.

### App Market Place

- Implemented login provider, Organization and App services through **APIs** using **Golang**.
- Used Fiber, SQL and Etd modules

### *Grafana Plug-in*

- Developed a Plug-in to process internal IoT metrics to Grafana readable format, so that IoT metrics can be monitored through Grafana dashboard. Reviewed Prometheus compatible **M3DB** for IoT metric storage.
- Went through **Grafana** source code to customize the organization's requirement.

### *Hashicorp Tools*

- Evaluated **Terraform**, **Consul**, **Nomad** tools and implemented POC.
- Made use of Consul **service meshes** to provide inter communication security and multi datacenters support to support multi regions and networks

### *Database Feeders*

- These services consume IOT device data from **Kakfa** and feed data to **Mqtt**, **Cassandra** and kafka from different region.
- Mqtt feeder processed device data to individual events and stored each event's last known state wrt a unique topic on Mqtt, Cassandra feeder stores the event data on Cassandra for historical reference and report generation. Tweaked Kafka configuration to support high throughput.
- Used Mqtt, Kafka, cassandra and badger db modules and implemented in **Golang**.

### *Queue System*

- Implemented file-based queuing system that keeps data and clients can subscribe and process data, so that the devices don't have to hold large data when database writes are busy. Code written in **Golang**.

### *App Deployment server*

- Implemented stateless API server that deploys apps on **Kubernetes**. Code written in **Java**.
- Familiarized with Kubernetes working and networking; had to pick it up from scratch.
- Used Kubernetes, **GCP** Compute, Container, Artifact registry, Network, DNS and Firewall libraries to support the functionality.
- Implemented **Envoy** control plane and used it as a **service discovery** service and proxy.
- Includes **docker** image building server, so that images are used by Kubernetes.

### *Namespace Service*

- Implemented a service that stores file metadata and another service that acts as a zookeeper for metadata storage service. Coded in **Java**.

### *Migrate APIs from JavaScript to Java*

- First project at this organization to understand existing Apis and to reduce the response time of API. Rewritten existing Apis of two clients in Java.

**Tatvik Technologies**

**Sr. Software Engineer | May 2013 – Jan 2020**

### **Synopsis**

I was the first employee at this organization. My work here has given me the platform to understand about different languages from assembly to Java and different platforms like mobile and desktop devices. Most of the products, I had a chance to work with, here are Audio/Video related.

### *RAHD device integration in Milestone environment*

- RAHD device (a security related device used by police and coast guards) is integrated to Milestone Client. Implemented in **C#**
- Added support for scheduling events and support to access RHAD device through ADAM IO device
- Attended the program to be a certified partner of Milestone Systems. This certification helped us to work as a partner to Milestone Systems.

### *Camera Report Generator*

- It involved producing a detailed report of cameras that are present under Milestone account wrt. user requirement. The details involve Cam name, cam IP, present cam status, for how long a cam was offline and the summary of the cams combined. Client was Kolkata police. Implemented in **C#**.
- Added video overlay feature so that it helps detect content theft.

### *AirPlay*

- Implemented Airplay Sdk, which acts as airplay receiver, supports multiple connections, passkey connect and supports video playback from different sources. Written in **C++**, **C**, **Objective C**
- Had to use different system apis to support functioning on Arm, Linux, Windows and Mac OS
- Familiarized with RTP and RTSP protocols.

### *BlueJeans Screen Codec*

- Worked for Bluejeans to support Screen codec build on windows using CMAKE, debugging using **GDB** and bug fixes. Used **C++**.
- Pitched an idea of capturing mouse to our team. We added mouse capture feature to Bluejeans product and exhibited in hackathon.

### *Rtmp based lecturing solution*

- Added feature to share image slides and videos using **Java** based **Wozwa** modules. Migrated whole code base from **ActionScript** 2.0 to 3.0. Used FFMPEG to support recording of the ongoing session.
- Developed a client application on iOS app, to support **RTMP** on iOS. Used **Objective C**

### *Miracast*

- Implemented multi-threaded audio video rendering from UDP packets. Handled frame drops and supported multiple connections. Written in **C++**.

### *Restaurant Suggestion App*

- Android and iOS app POC which reads all user check-ins and map that with Yelp data to find patterns to suggest restaurant to the user. Made Android and iOS apps and a server to process data.

### *Screen Capture based lecturing application*

- Had to develop UI wrt. design provided by the client. Since Java didn't support such UI, had to create ten plus windows and give feel to user that they all are one window. Whole application is written in **Java**.
- The application supported camera capture, mic capture, sound capture, RTMP live streaming, Mac/iOS device capture, auto file save and upload to YouTube like platforms.
- The features like camera capture and system sound capture, which wasn't supported by Java. Along with them, for all other features those weren't supported by Java had been developed as OS based libraries and integrated to Java using **JNI**.
- Modified third party java library to support **RTMPE** and **RTMPT**, along with password protection of the stream.
- Any of the capturing features could be turned off and on, while the session was going on. Supported licensing.
- Had to make necessary changes to provide application as standalone application. For that, had to encrypt the code using Code encryptor and prepare the installer using **Wix**.

**Software Engineer | June 2011 – May 2013**

### *H264 encoder/decoder for custom processor*

- Since it was a custom-made processor with its own instructions, supporting multi-threads. Went through Windows and Arm assembly programming to have basics covered. Written few modules of encoder/decoder. Had to make sure the memory, and machine cycles are used efficiently. Written in **C++**.

### *Video conferencing app*

- Developed UI elements and their events for the application. Had to use photoshop to give suitable look and feel. It was **QT** based application

### *DirectShow filters*

- Had to understand basic functionality of encoders and generic terms used in the industry to start. Integrated Tavik's encoder/decoder in the respective functions in the workflow of Directshow filter graph. Had to use threads and queues, and had to skip few steps in the graph building process to achieve lag free rendering. Implemented in **C++**.